CDX-70/U70

SERVICE MANUAL

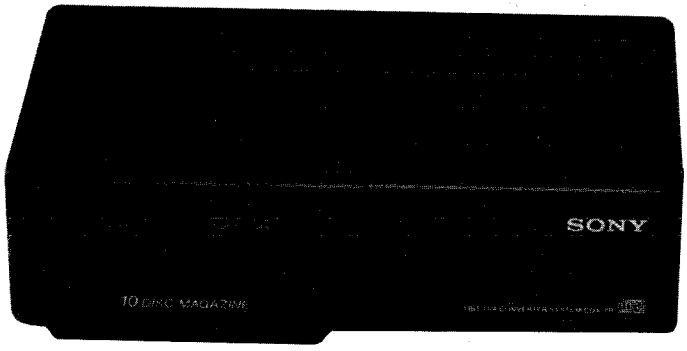
US Model

CDX-U70

AEP Model

E Model

CDX-70



Model Name Using Similar Mechanism	CDX-U300

SPECIFICATIONS

System	Compact disc digital audio system
Frequency response	5 – 20,000 Hz ±1 dB
Wow and flutter	Below measurable limit
Signal-to-noise ratio	95 dB
Outputs	UNILINK control output (8 PIN) Analogu audio output (RCA PIN)
Current drain	800 mA (CD playback) 800 mA (during loading or ejecting a disc)
Operating temperature	– 10°C to 55°C
Dimensions	Approx. 305 × 88 × 177 mm (w/h/d) not incl. projecting parts and controls
Weight	Approx. 2.5 kg
Power requirement	12 V DC car battery (negative ground)
Supplied accessories	Disc magazine (1) Mounting hardware (1 set) UNILINK cable (1) RCA PIN cord (1)

Design and specifications subject to change without notice.

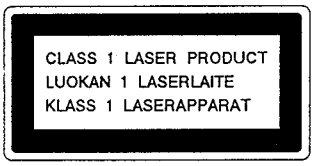
MICROFILM

COMPACT DISC CHANGER

SONY®

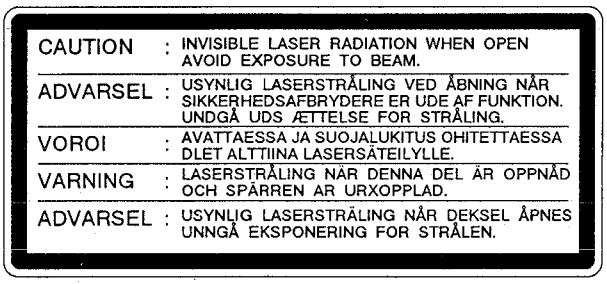
NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK OR BASE UNIT

The laser diode in the optical pick-up block may suffer electrostatic breakdown because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body.
During repair, pay attention to electrostatic breakdown and also use the procedure in the printed matter which is included in the repair parts.
The flexible board is easily damaged and should be handled with care.



This Compact Disc player is classified as a CLASS 1 LASER product.
The CLASS 1 LASER PRODUCT label is located on the rear exterior.

The following caution label is located inside of the unit.


CAUTION : INVISIBLE LASER RADIATION WHEN OPEN AVOID EXPOSURE TO BEAM.
ADVARSEL : USYNLIG LASERSTRÅLING VED ÅBNING NÅR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION. UNDGÅ UDS ÆTTELSE FOR STRÅLING.
VOROI : AVATTAESSA JA SUOJALUKITUS OHITETTAESSA DLET ALTTIINA LASERSÄTEILYLLE.
VARNING : LASERSTRÅLING NÄR DENNA DEL ÄR OPPNÅD OCH SPÄRREN AR URXOPPLAD.
ADVARSEL : USYNLIG LASERSTRÅLING NÅR DEKSEL ÅPNES UNNGÅ EKSPONERING FOR STRÅLEN.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY SHADING AND MARK ⚠ ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

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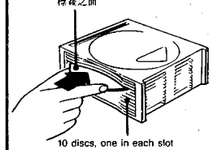
SECTION 1
GENERAL

This section is extracted from instruction manual.

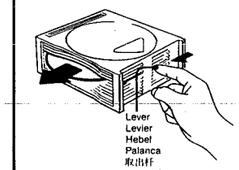
Preparations
Préparatifs
Vorbereitungen
Preparativos
準備

1

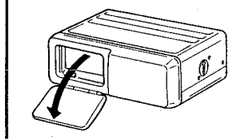


10 discs, one in each slot
Dix disques, un par fente
Insgesamt 10 Platten (eine in jedem Fach)
10 discos, 1 en cada ranura
10 張唱片，一層一張。

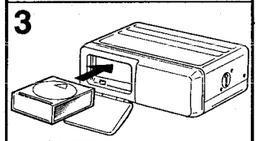
To remove
Retrait
Herausnehmen der Platte
Extracción
架取出唱片時



2

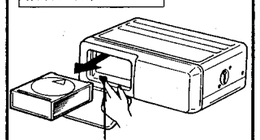


3

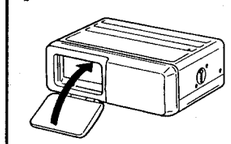


Disc magazine
Magasin à disques
Plattenmagazin
Cargador de discos
唱片匣

To remove
Retrait
Herausnehmen des Magazins
Extracción
架取出唱片匣時



4



Use the unit with the door closed
Otherwise, foreign matter may enter the unit, and contaminate the lenses in the player.

Notes
- To play an 8 cm CD, use the Sony CSA-8 adaptor (not supplied). Playing an 8 cm CD without the adaptor may damage the unit.
- Even if you connect this unit to a master unit which is equipped with the custom file function, you will not be able to use the disc memo function and the bank function with this unit.

Utiliser cet appareil avec la porte fermée
Sinon, des matières étrangères peuvent entrer dans l'appareil et encrasser la lentille du lecteur.

Remarques
- Pour la lecture de disque compact de 8 cm, utiliser l'adaptateur Sony CSA-8 (non fourni). Sinon, l'appareil risque d'être endommagé.
- Même si cet appareil est raccordé à un autre appareil équipé de la fonction de fichier personnalisé, les fonctions de mémo de disque et de banque sont inopérantes.

Das Gerät nur mit geschlossener Tür betreiben
Halten Sie die Tür des Gerätes stets geschlossen, damit keine Fremdkörper in das Geräteinnere gelangen und die Linse im Spieler verschmutzen können.

Hinweise
- Verwenden Sie zur Wiedergabe einer 8-cm-CD den Sony Adapter CSA-8 (Sonderzubehör). Wiedergabe einer 8-cm-CD ohne Adapter kann zur Beschädigung des Gerätes führen.
- Die Custom File-Funktionen Disc Memo und Bank des angeschlossenen Steuergeräts können nicht mit diesem CD-Wechsler verwendet werden.

Emplee la unidad con la puerta cerrada
De lo contrario, podrían introducirse materias extrañas y contaminar el objetivo del reproductor.

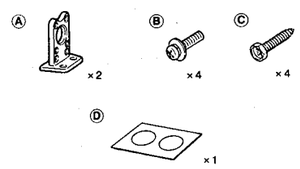
Notas
- Para reproducir un disco compacto de 8 cm, utilice el adaptador CSA-8 Sony (no suministrado). La reproducción de un disco compacto de 8 cm sin el adaptador puede dañar la unidad.
- Aunque haya conectado esta unidad a una unidad principal que disponga de función de archivo de usuario, no podrá utilizar la función de memornado de disco ni la de banco con ella.

使用時請關上唱片匣蓋門
否則易讓異物夾雜入於機內，或使唱機的透鏡蒙上灰塵。

註
- 播放 8cm 唱片時，請另使用一個 Sony CSA-8 型大孔唱片固定器。播放 8cm 唱片時若不使用該唱片固定器，會致使唱機損毀。
- 即使把本機連接到一具備有能自編播放順序的唱機，本機的唱片記憶功能及存儲功能也都將失效。

Installation
Installation
Installation
Instalacion
安裝

Supplied Mounting Hardware
Materiel de montage fourni
Mitgelieferte Befestigungsteile
Ferreteria de montaje suministrada
附屬的安裝用道具



Precautions
- Choose the mounting location carefully, observing the followings:
  — The fuel tank should not be damaged by the tapping screws.
  — There should be no wire harnesses nor pipelines under the place where you are going to install the unit.
  — The spare tire, tools or other equipment in or under the trunk should not be interfered with or damaged by the screws or the unit itself.
- Be sure to use only the supplied mounting hardware for a safe and secure installation.

Précautions
- Choisir soigneusement l'endroit de montage en observant ce qui suit.
  — Le réservoir d'essence ne doit pas être endommagé par les vis taraudeuses.
  — Il ne doit pas y avoir de faisceau de fils ou de tuyaux à l'endroit où l'on désire installer l'appareil.
  — La roue de secours, les outils ou autre équipement dans ou sous le coffre ne doivent pas être gênés ni endommagés par les vis ou l'appareil lui-même.
- Veiller à utiliser uniquement le matériel de montage fourni pour une installation correcte et sûre.

Zur besonderen Beachtung
- Bei der Wahl des Einbauortes ist folgendes zu beachten:
  — Der Tank darf durch die Blechschrauben nicht beschädigt werden.
  — Unter der Fläche, auf die das Gerät montiert werden soll, dürfen sich keine Drähte oder Rohrleitungen befinden.
  — Ersatzreifen, Werkzeug usw. dürfen durch die Blechschrauben nicht beschädigt werden. Achten Sie auch darauf, daß die Herausnahme des Ersatzreifens, Werkzeugs usw. nicht durch das Gerät behindert wird.
- Für sicheren und stabilen Einbau verwenden Sie ausschließlich die mitgelieferten Befestigungsteile.

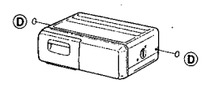
Precauciones
- Elija cuidadosamente el lugar de montaje, teniendo en cuenta lo siguiente:
  — El depósito de combustible no deberá dañarse con los tornillos roscachapa.
  — No deberá haber mazos de conductores ni tubos debajo del lugar donde vaya a instalar la unidad.
  — La rueda de repuesto, las herramientas, u otros equipos situados dentro o debajo del portaequipajes no deberán verse interferidos ni dañados por los tornillos ni por la propia unidad.
- Para realizar una instalación segura, emplee solamente la ferretería de montaje suministrada.

使用前須知事項
- 安裝以前請參照下列事項，仔細選擇安裝位置：
  －不可讓自攻螺釘傷及油箱。
  －唱機不可安裝在電線配線或暖氣管上面。
  －唱機安裝位置或螺釘等不可妨礙或觸及備用輪胎、汽車修理工具或其他汽車零件。
- 爲保安全及牢固起見，安裝時請使用附屬的安裝用道具。

How to Install the Unit
Installation de l'appareil
Installation des Gerätes
Instalación de la unidad
如何安裝

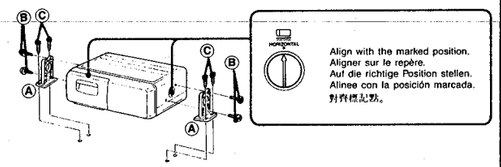
Horizontal installation
Installation de l'appareil à l'horizontale
Horizontaler Einbau
Instalación horizontal
水平裝法

1



Cover the holes which are not used.
Recouvrir les orifices qui ne sont pas utilisés.
Die nicht verwendeten Löcher abdecken.
Cubra los orificios no empleados.
貼住不用的插孔。

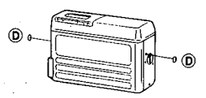
2



Align with the marked position.
Aligner sur le repère.
Auf die richtige Position stellen.
Alinee con la posición marcada.
對齊標記點。

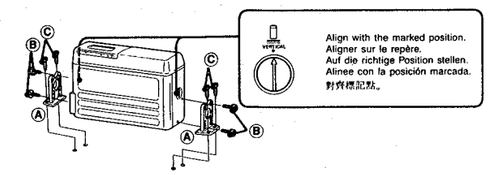
Vertical Installation
Installation verticale
Vertikaler Einbau
Instalación vertical
垂直裝法

1



Cover the holes which are not used.
Recouvrir les orifices qui ne sont pas utilisés.
Die nicht verwendeten Löcher abdecken.
Cubra los orificios no empleados.
貼住不用的插孔。

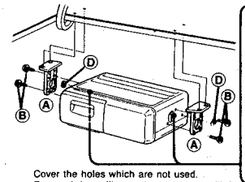
2



Align with the marked position.
Aligner sur le repère.
Auf die richtige Position stellen.
Alinee con la posición marcada.
對齊標記點。

Suspended installation
Installation suspendue
Hängender Einbau
Instalación suspendida
懸掛裝法

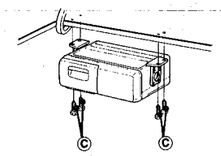
1



Align with the marked position.
Aligner sur le repère.
Auf die richtige Position stellen.
Alinee con la posición marcada.
對齊標記點。

Cover the holes which are not used.
Recouvrir les orifices qui ne sont pas utilisés.
Die nicht verwendeten Löcher abdecken.
Cubra los orificios no empleados.
貼住不用的插孔。

2



When the unit is to be installed under the rear tray etc. in the trunk room, make sure that the following provisions are made.
- Choose the mounting location carefully so that the unit can be installed horizontally.
- Make sure that the unit does not hinder the movement of torsion bar spring etc. of the trunk lid.

Si l'appareil doit être installé sous la plage arrière dans le coffre, par exemple, prenez d'abord les précautions suivantes.
- Bien choisir l'emplacement pour pouvoir installer l'appareil à l'horizontale.
- Vérifier que l'appareil ne gêne pas le mouvement du ressort du capot, entre autres.

Bei der hängenden Montage unter der Heckablage oder im Kofferraum beachten Sie folgende Vorsichtsmaßnahmen:
- Wählen Sie den Befestigungsort sorgfältig so aus, daß die Einheit horizontal montiert werden kann.
- Achten Sie darauf, daß die Einheit die Federn, den Arm usw. des Kofferraumdeckels nicht behindert.

Cuando desee instalar la unidad debajo de la bandeja trasera, etc., en el portaequipajes, tenga en cuenta lo siguiente:
- Elija cuidadosamente el lugar de montaje de forma que la unidad pueda instalarse horizontalmente.
- Cerciórese de que la unidad no impida el movimiento del resorte de la barra de torsión, etc., de la tapa del portaequipajes.

若要把本機安裝在車後行李箱的後支架上等處的話，請注意下列事項：
- 安裝時須使本機保持水平狀態。
- 不可讓本機妨礙了行李箱蓋的扭轉杆彈簧。

Connections
Connexions
Anschluß
Conexiones
電線之連接

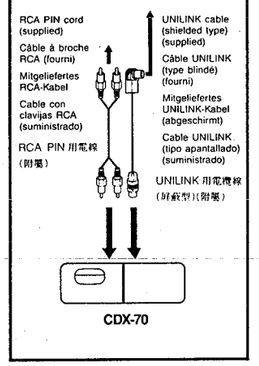
Be sure to connect the L-angle to a Sony UNILINK compatible car audio.

Ne pas oublier de brancher la prise en L sur la chaîne audio de la voiture, compatible Sony UNILINK.

Darauf achten, den L-förmigen Stecker an ein Sony UNILINK-kompatibles Auto-Stereogerät anzuschließen.

Cerciórece de conectar la clavija en forma de L a un sistema de audio del automóvil compatible con UNILINK Sony.

務必連接 L 角至和Sony UNILINK 系統有共容性的汽車音響裝置。



For details, refer to the Installation/Connection manual of each product.

Pour plus de détails, se reporter au mode d'emploi pour l'installation/connexion de chaque produit.

Einzelheiten entnehmen Sie der Installations/ Anschluß-Anleitung des betreffenden Geräts.

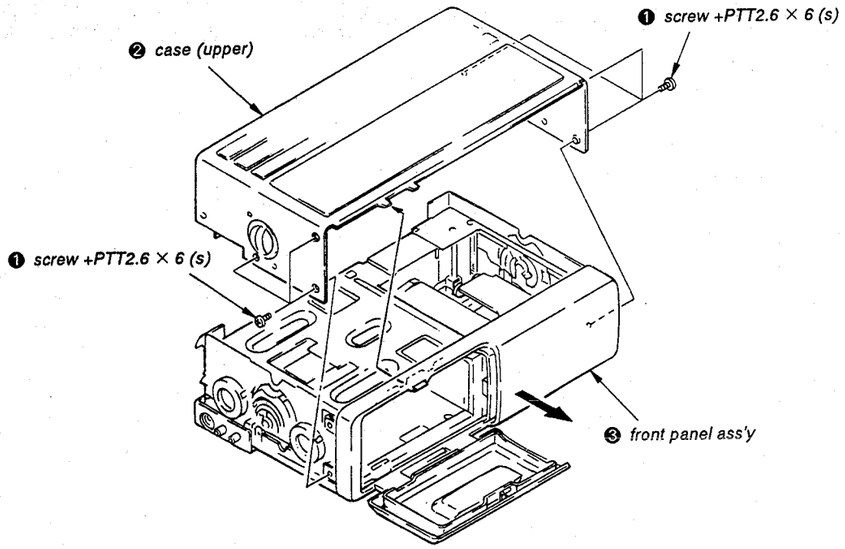
Con respecto a los detalles, consulte el manual de Instalación/Conexiones de cada producto.

詳細請參看各個機件的安裝/連接使用說明書。

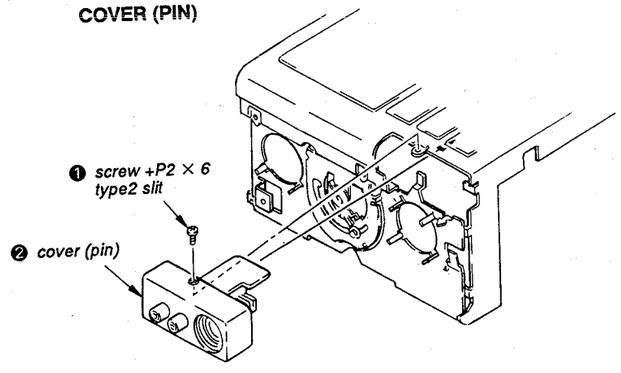
SECTION 2
DISASSEMBLY

Note: Follow the disassembly procedure in the numerical order given.

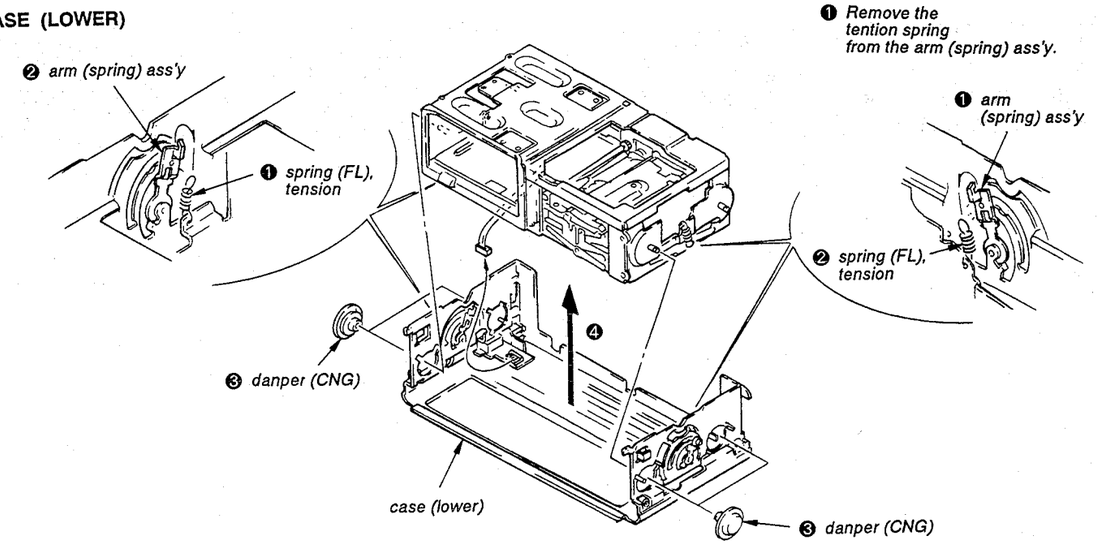
CASE (UPPER) AND FRONT PANEL ASS'Y



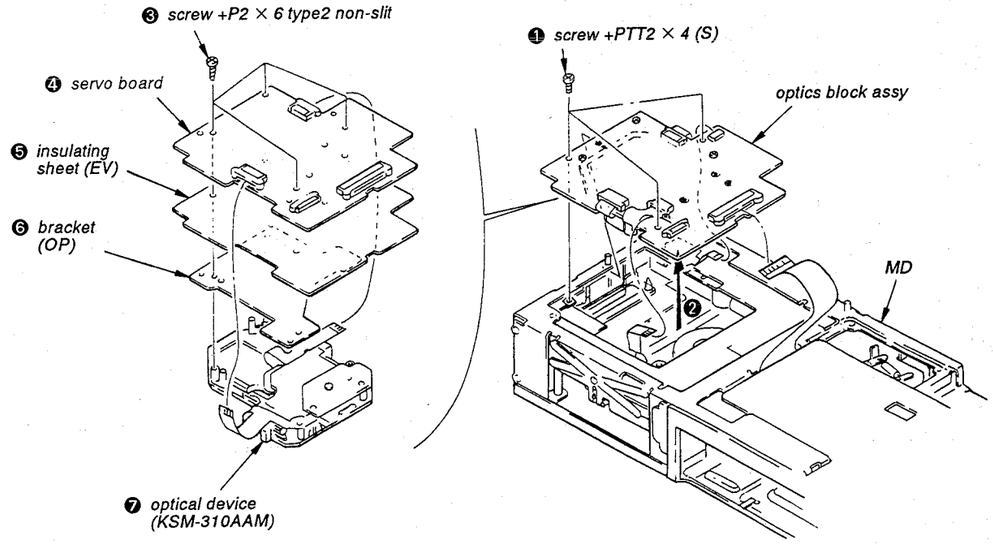
COVER (PIN)



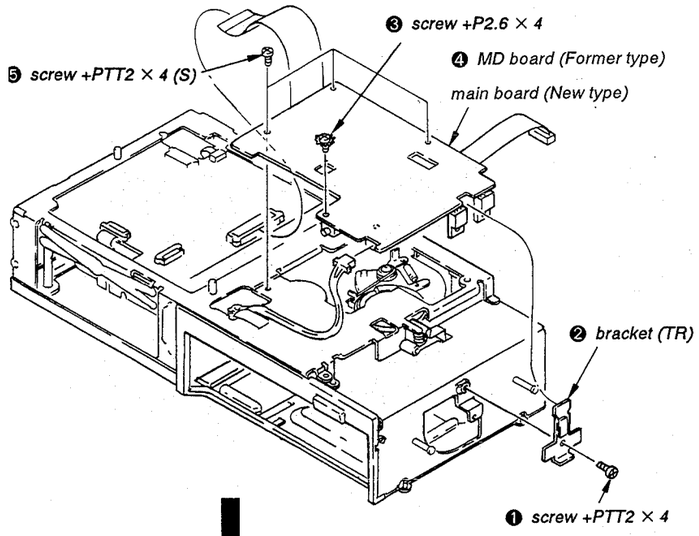
CASE (LOWER)



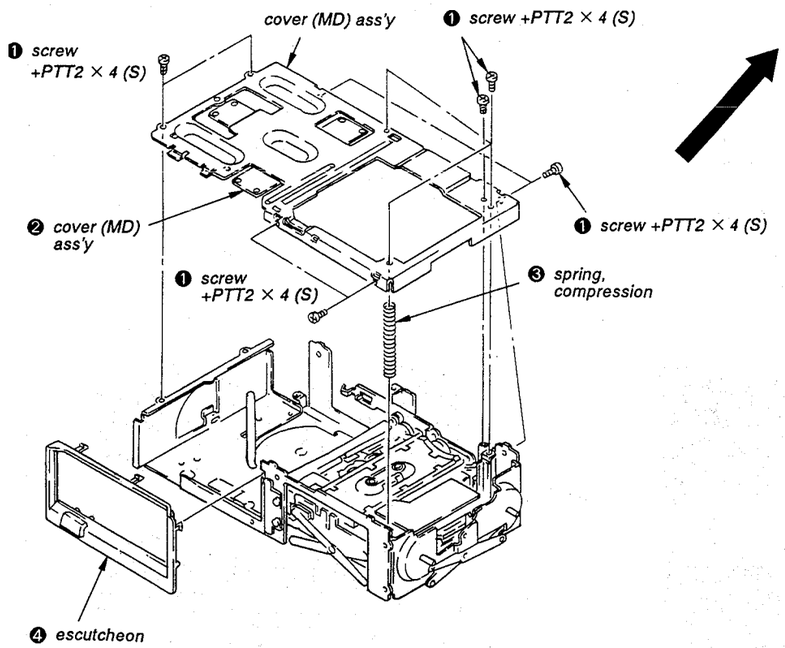
SERVO BOARD AND OPTICAL DEVICE (KSM-310AAM)



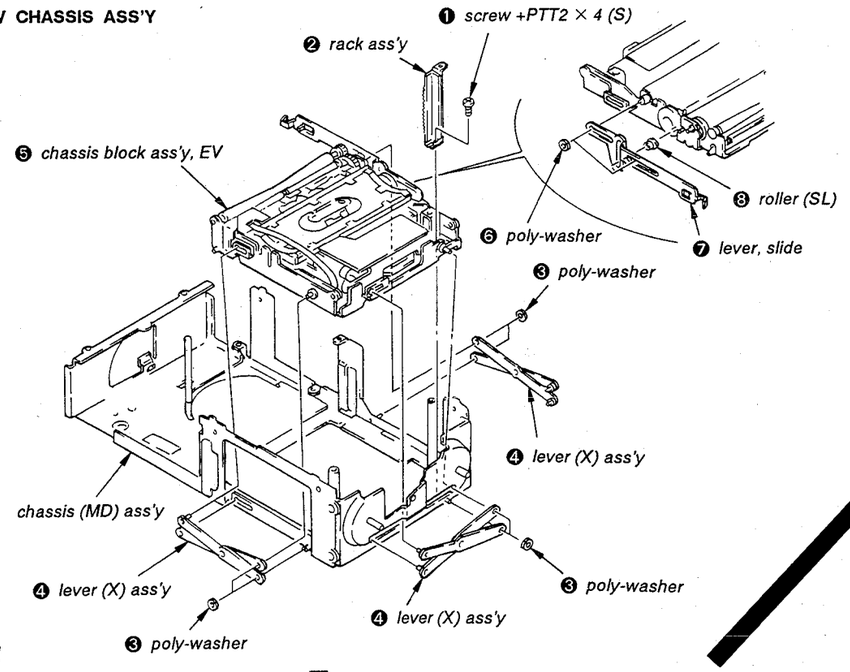
MD BOARD



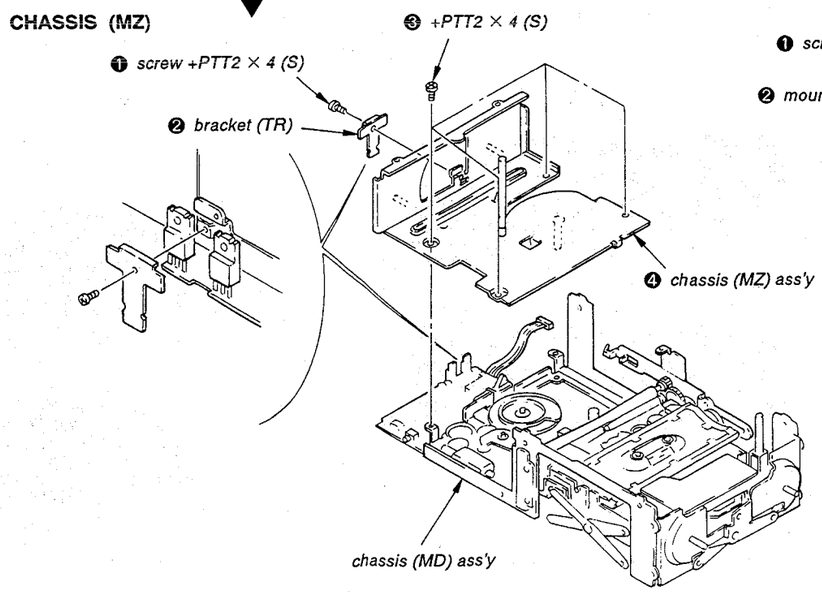
COVER (MD) ASS'Y AND ESCUTCHEON


cover (MD) ass'y
❶ screw +PTT2 × 4 (S)
❶ screw +PTT2 × 4 (S)
❷ cover (MD) ass'y
❶ screw +PTT2 × 4 (S)
❸ spring, compression
❶ screw +PTT2 × 4 (S)
❹ escutcheon

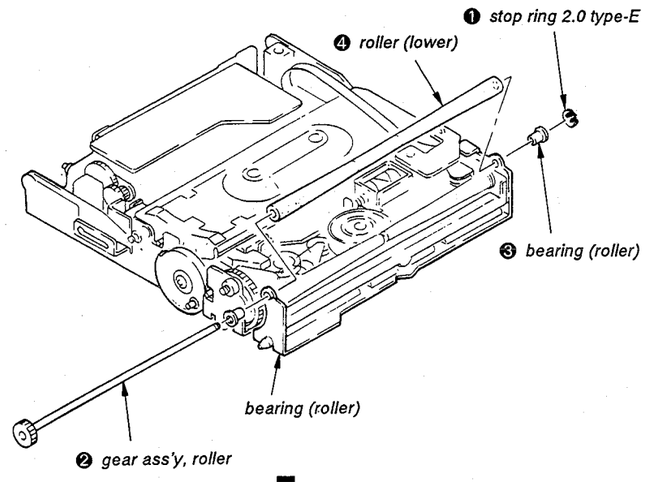
EV CHASSIS ASS'Y



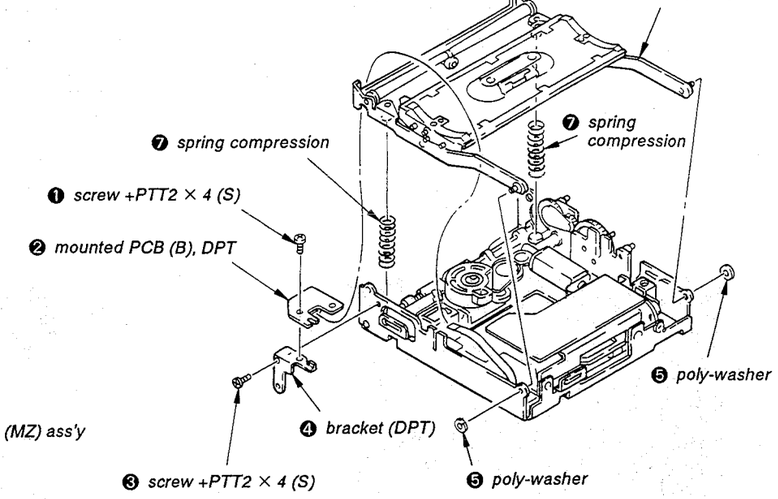
CHASSIS (MZ)



ROLLER (LOWER)



DPT BOARD AND ARM (R) ASS'Y



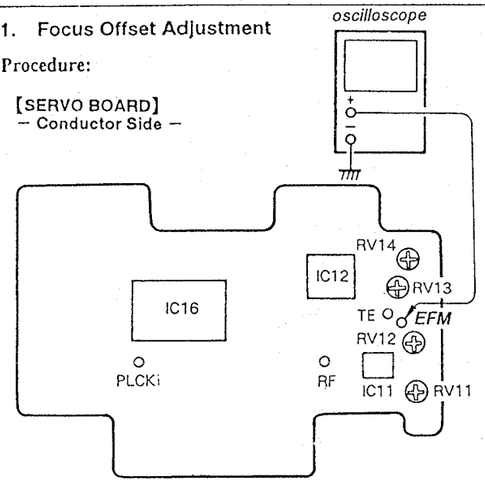
SECTION 3
ELECTRICAL ADJUSTMENTS

1. Perform adjustments as given.
2. Be sure to use the disc "YEDS-18" parts code: 3-702-101-01, but only when indicated.
3. Power supply voltage: DC14.4 V (more than 3A).

1. Focus Offset Adjustment

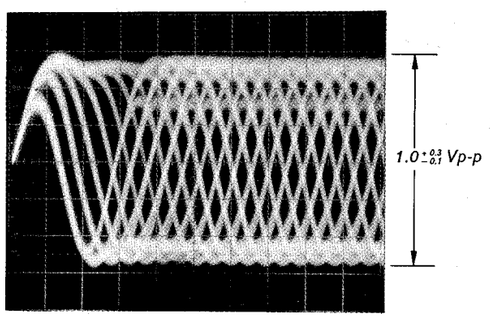
Procedure:

【SERVO BOARD】
– Conductor Side –



1. Connect the oscilloscope to SERVO board test point EFM.
2. Put the set into play mode by loading the disc.
3. Adjust (SERVO board) RV12 so that the oscilloscope. Waveform eye pattern is good.
   (A good eye pattern means that the diamond shape (◇) in the center of the oscilloscope can be clearly distinguished.)

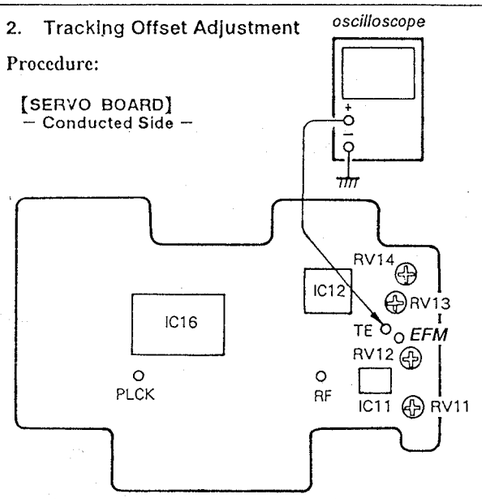
Volt/Div: 200 mV
Time/Div: 0.5 µSec



2. Tracking Offset Adjustment

Procedure:

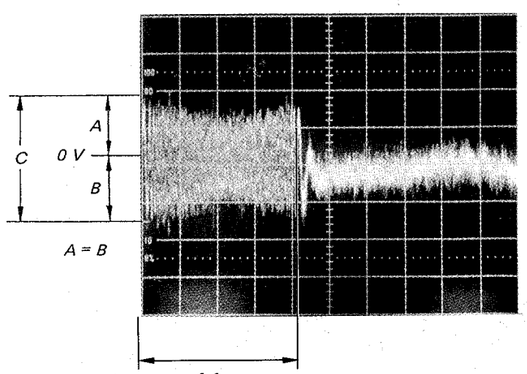
【SERVO BOARD】
– Conducted Side –



1. Connect the oscilloscope to SERVO board test point TE, pin ① of IC11.
2. Put the set into play mode by loading the disc.
3. Press the ⏮ AMS ⏭ button, then, check the traverse waveform*.
4. Adjust RV11 (SERVO board) so that oscilloscope reading is symmetrical in relation to 0 V.

*Traverse waveform: This is the tracking error waveform appears when crossing the track.

Volt/Div: 0.5 V
Time Div: 2 mSec
Center 0 V



traverse wafeform
(100 track jump waveform)

3. Tracking Gain Adjustment (coarse adjustment)

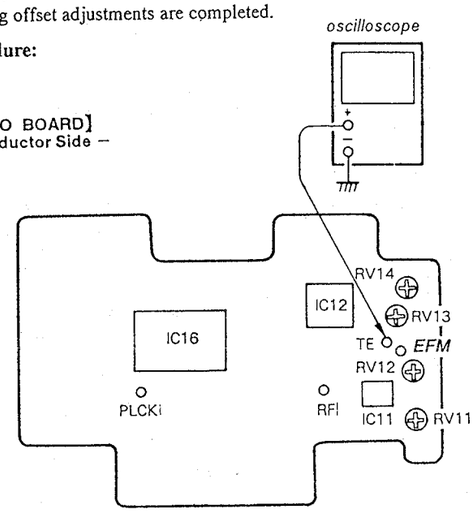
This adjustment is to be performed when replacing the following parts.

- Optical Pick-up Block
- RV13

This adjustment should be performed after focus offset and tracking offset adjustments are completed.

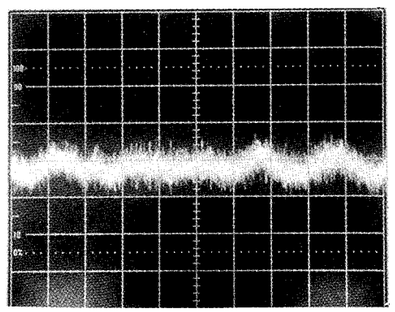
Procedure:

【SERVO BOARD】
– Conductor Side –



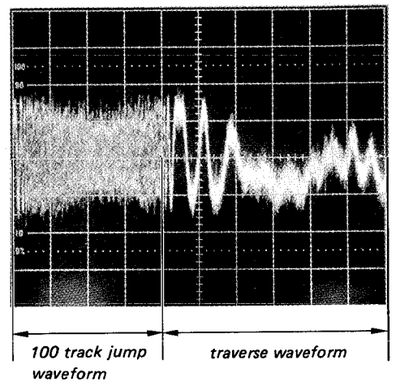
1. Connect the oscilloscope to SERVO board test point TE.
2. Put the set into play mode by loading the disc.
3. Turn SERVO board RV13 from clockwise stop, then check the oscilloscope waveform.
   Fix RV13 at the position where the wavwaveform disappears.

Volt/Div: 0.5 V
Time/Div: 2 mSec

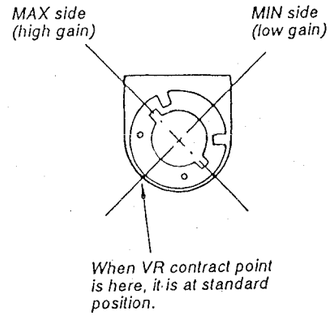


waveform when the wave appears

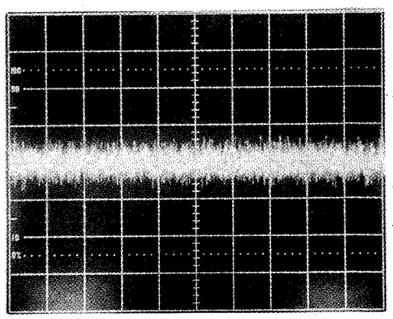
- **When gain lowered…**
  When selecting by pressing ⏮ AMS ⏭ button, brake application is poor because of low tracking gain. Threfore, the traverse waveform appears after the 100 track jump waveform, then the selection will be located slowly.



- **When gain is highered…**
  Operation noise is heard due to a scratch or dust, then operation will be instability.



RV13 standard position



waveform when the wave disappeared

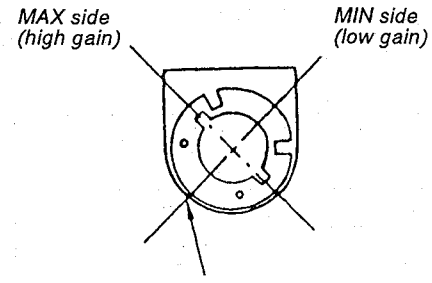
4. Focus Gain Adjustment (coarse adjustment)

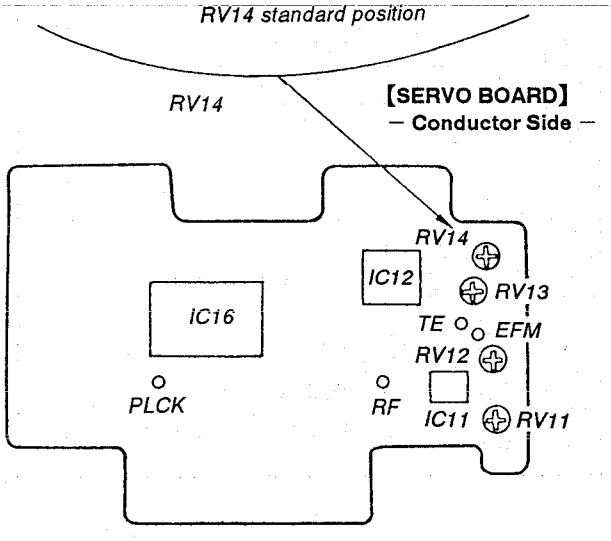
This adjustment is to be performed when replacing the following parts.

- Optical Pick-up Block
- RV14

Procedure:

1. Set RV14 (SERVO board) to the standard position.
2. Check that there is not an abnormal amount of operation noise (white noise) from the 2-axis devise. If there is, turn RV14 slightly clockwise.





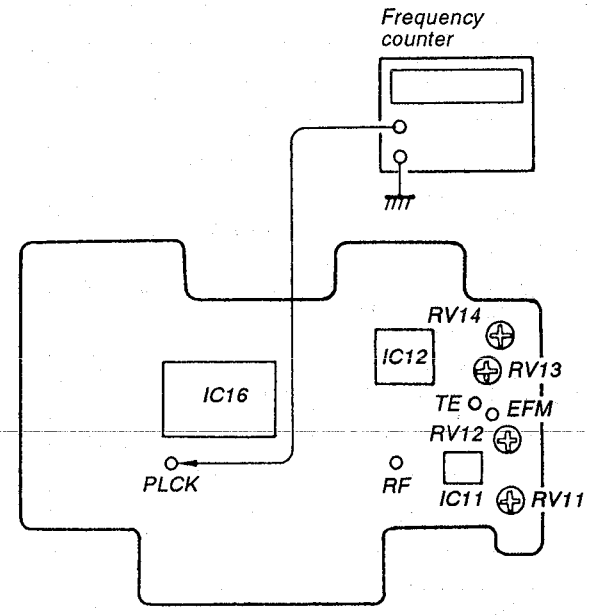
- **When gain is highered...**
  The set does not play because of no focus operation.
- **When gain is highered...**
  Operation noise is heard due to a scratch or a dust, then operation will be unstable.

5. PLL Freerun Frequency Adjustment

Procedure:

1. Connect frequency counter to Pin ㊶ of IC16 (Test point PLCK).
2. Confirm the frequency is 4.3218 MHz ± 20 kHz.

【SERVO BOARD】 – Conductor Side –



SECTION 4
DIAGRAMS

4-1. IC601 SYSTEM CONTROL MICROCOMPUTER (μPD75116GF-F42-3BE) PORT FUNCTION DESCRIPTION

Pin No.	Port Name	I/O	Port Function
1	APC	O	Laser ON/OFF L: Laser ON
2	CD RESET	O	Reset for Servo System L: Reset
3	CD ON	O	Power ON/OFF for Servo System H: ON
4	–	–	
5	–	–	
6	–	–	
7	RESET	I	Reset for IC601 L: Reset
8	OSC	–	4.19 MHz self-excited oscillation
9	OSC	–	
10	PROM DATA	I/O	E²PROM Data, I/O
11	PROM CLOCK	O	Clock on writing to or reading from E²PROM
12	–	O	
13	ROM INIT	I	Reset by setting L, initialize E²PROM
14	–	–	
15	–	–	
16	–	–	
17	–	–	
18	AUDIO MUTE	O	Mute audio output H: Mute
19	ELEVATOR ON	O	Elevator up/down, Power ON/OFF for sensor H: ON
20	M	O	Motor M601 control
21	M	O	
22	PLG	O	H: Apply power voltage to plunger
23	MC	O	M501, M502 motor control
24	MB	O	
25	MA	O	
26	VSS	–	
27	EJ KEY	I	H: EJECT key is pushed
28	PST	I	H: Magazine is locked
29	EHS	I	Detects height of elevator
30	SCOR	I	SCOR of DSP
31	–	I	
32	A/OUT	I	L: There is AUDIO OUT
33	EE PROM	I	L: There is E²PROM
34	D/OUT	I	H: There is not DIGITAL OUT
35	BUSON	I	L: Communicates with controller
36	–	–	
37	–	–	
38	–	–	

Pin No.	Port name	I/O	Port Function
39	LINK OFF	O	Not used
40	REQ	O	Request serial communication
41	SI	I	Data input of serial communication
42	SO	O	Data output of serial communication
43	SCK	I	Clock for serial communication
44	BACK UP	I	Detects BACK UP H: BACK UP ON
45	EJT	I	EJT sensor input
46	LOT	I	LOT sensor input
47	HOME	I	HOME sensor input L: Location 1
48	TOP	I	TOP sensor input
49	DPT	I	L: During disc is passing
50	DOE	I	L: Disc is upon the pick-up
51	HOT	I	Not used
52	CES	I	L: Disc chucking is completed
53	SUBQ	I	SUBQ of DSP
54	GFS	I	GFS of DSP
55	FOK	I	FOK of DSP
56	SENSE	I	SENSE of DSP
57	VDD	–	
58	–	–	
59	CD CLOCK	O	Control Servo System
60	CD LATCH	O	
61	CD DATA	O	
62	D MUTE	O	Not used
63	SQCK	O	SQCK of DSP
64	EMPH	O	H: During the emphasized disc is playing

4-2. IC501 (BA6247N) MOTOR DRIVER IC OPERATION

(DRIVER BOARD)

The elevator motor connected between Pin ② and Pin ⑩ of IC501 is as M501, and the disc loading/saving motor connected between Pin ③ and Pin ⑩ of IC501 is as M502.

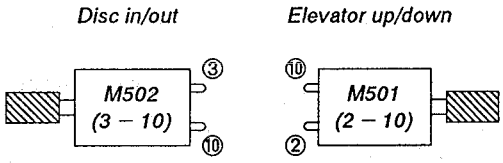
When the IC port logic is Pin ② > Pin ⑩, Pin ③ > Pin ⑩, the rotating direction of M501 and M502 becomes normal.

ROTATION TRUTH TABLE

① When MB = MC, both M501 and M502 are stop. (MA value is free.)

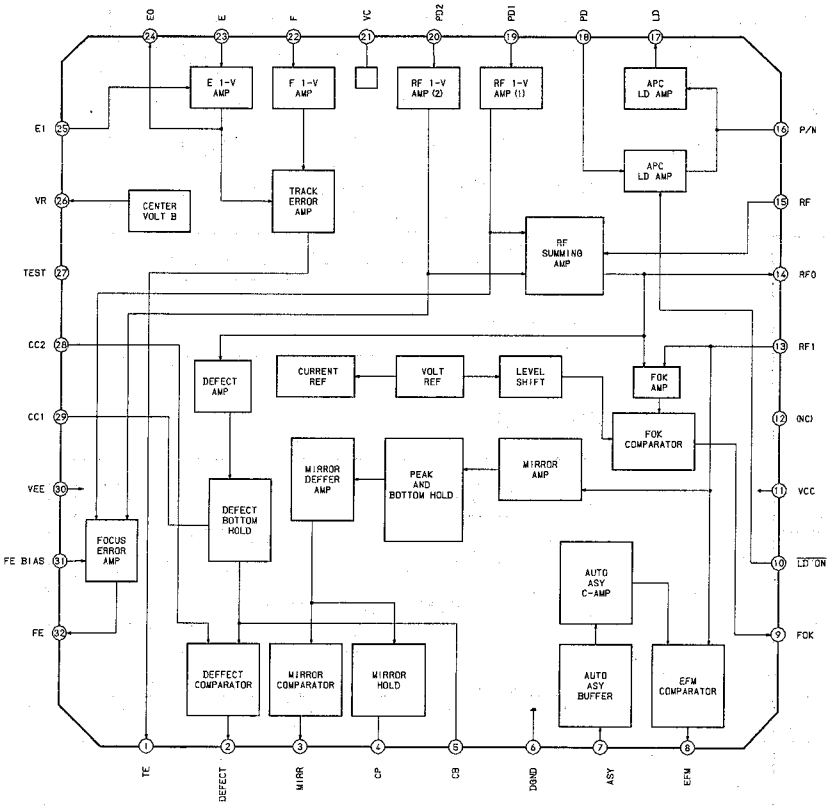
② When MB ≠ MC:

MA Pin ⑥	MB Pin ⑤	MC Pin ④	M501	M502	Motor Terminal			Operation
					②	③	⑩	
L	L	H	Reverse	Stop	L	OPEN	H	Elevator UP
H	L	H	Normal	Stop	H	OPEN	L	Elevator DOWN
L	H	L	Stop	Reverse	OPEN	L	H	Disc load
H	H	L	Stop	Normal	OPEN	H	L	Disc save

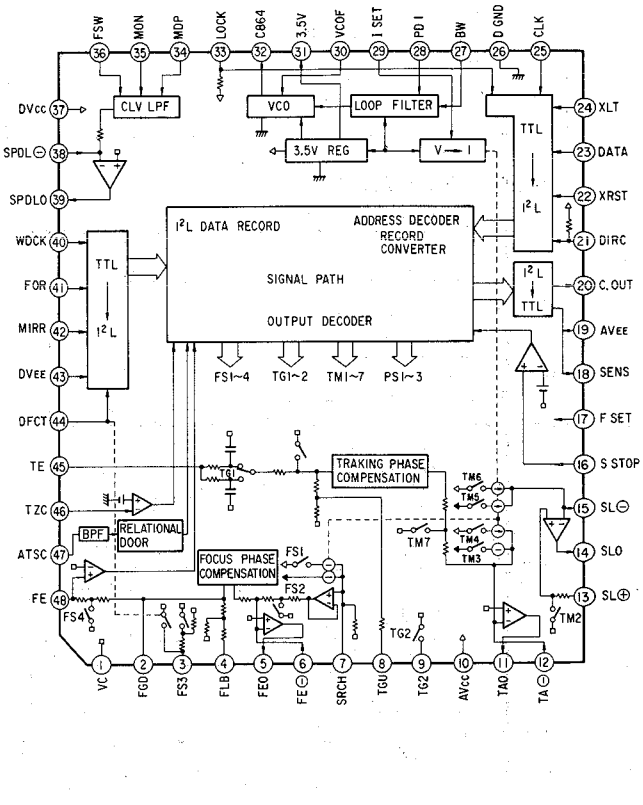


- **IC Block Diagrams**

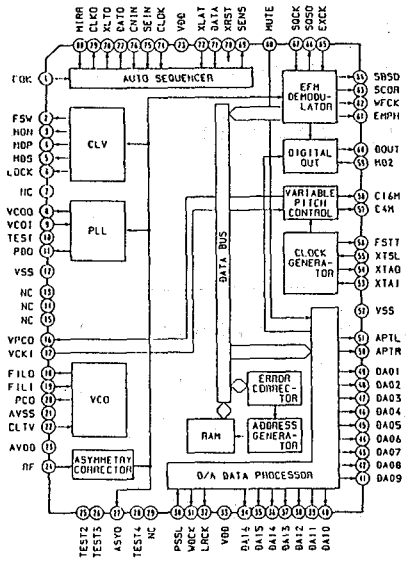
IC11 CXA1081Q



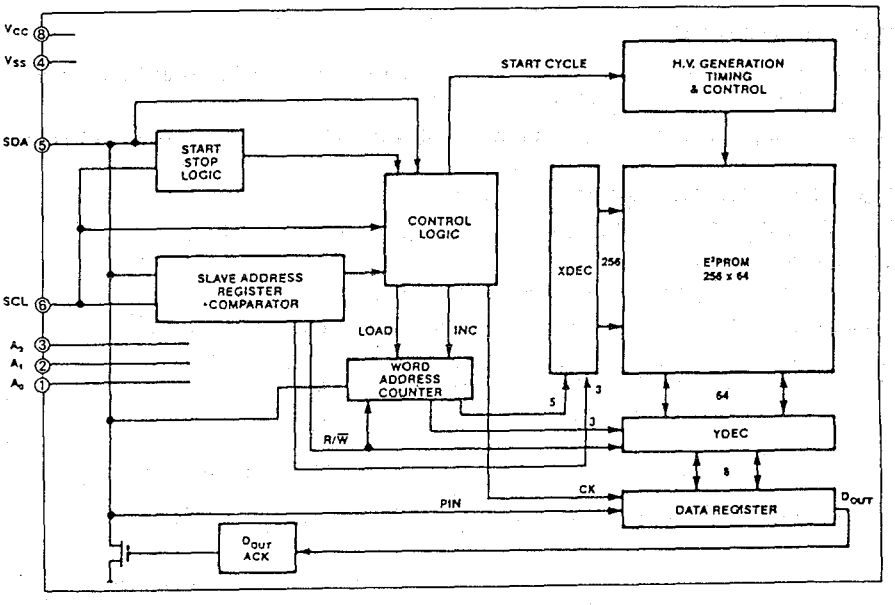
IC12 CXA1182Q-Z



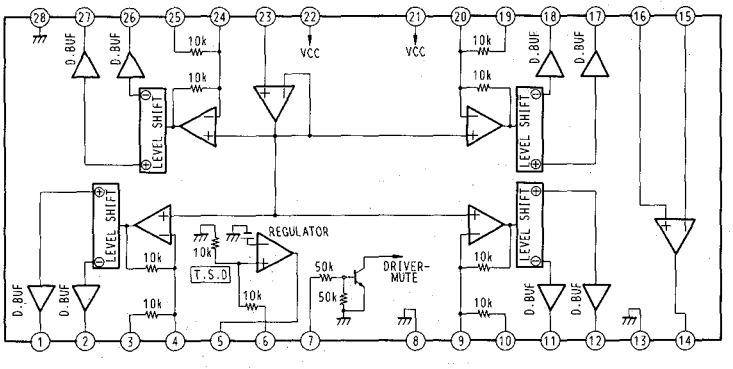
IC13 CXD2500BQ



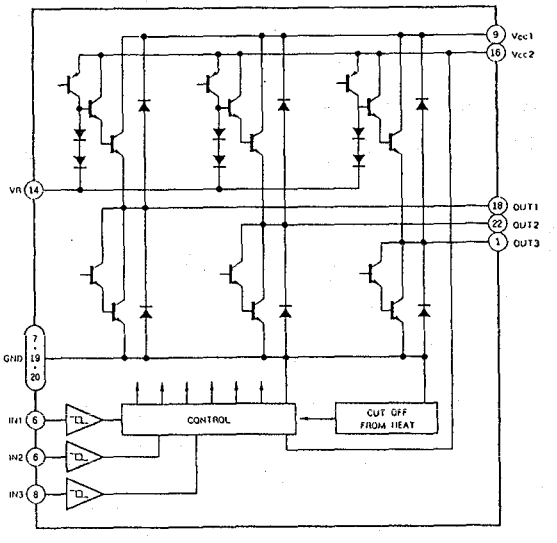
IC602 XC24C16SI



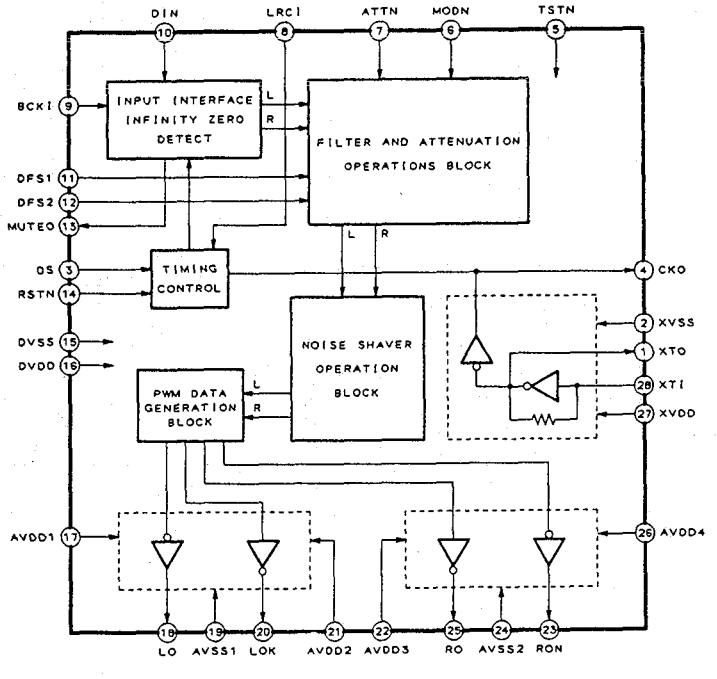
IC14 BA6296FP



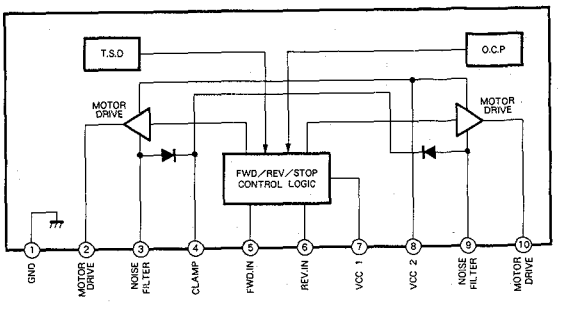
IC501 BA6247FP



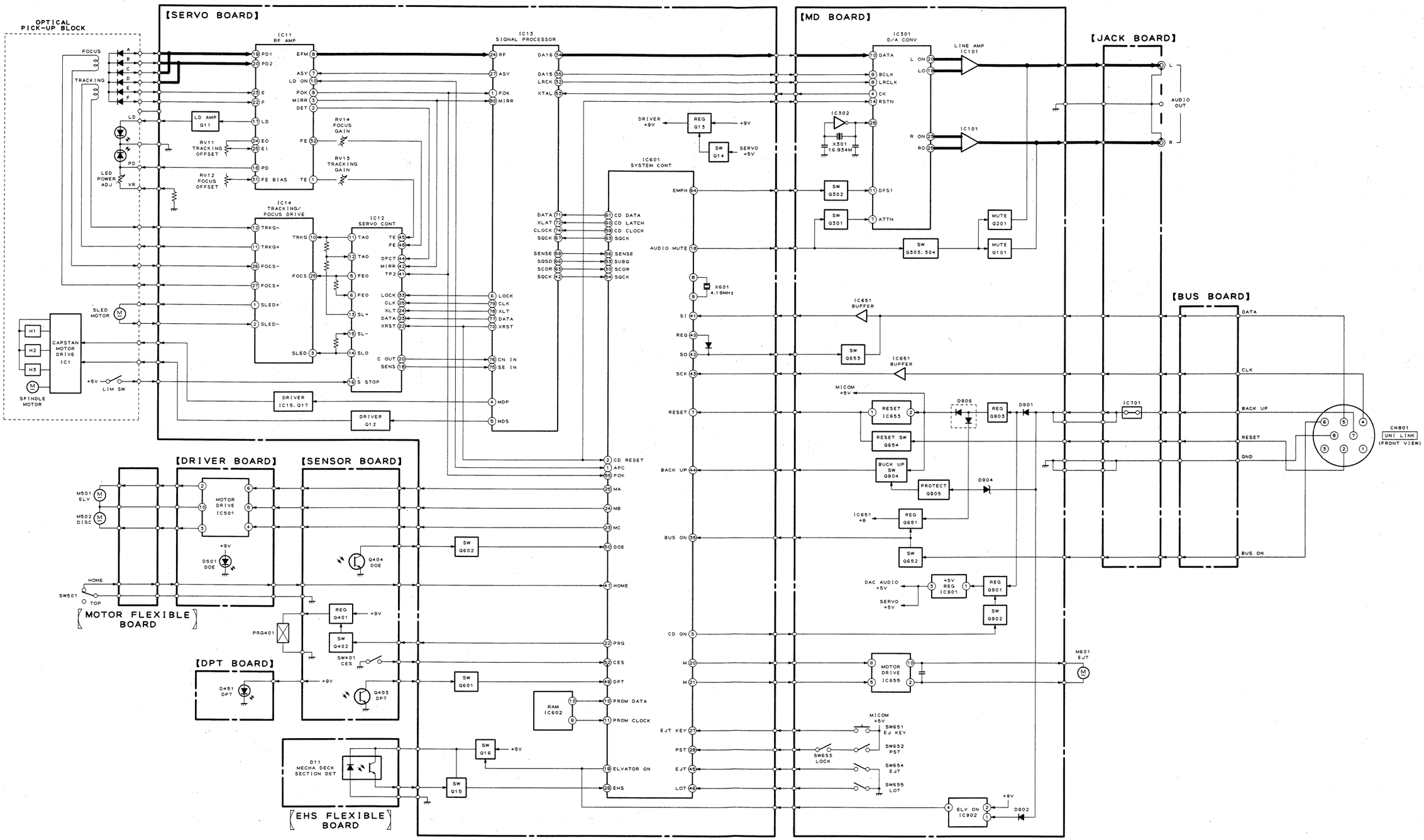
IC301 SM5871AS



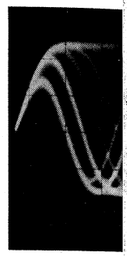
IC652 LB1641



4-3. BLOCK DIAGRAM

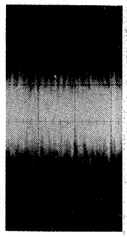


• Waveform

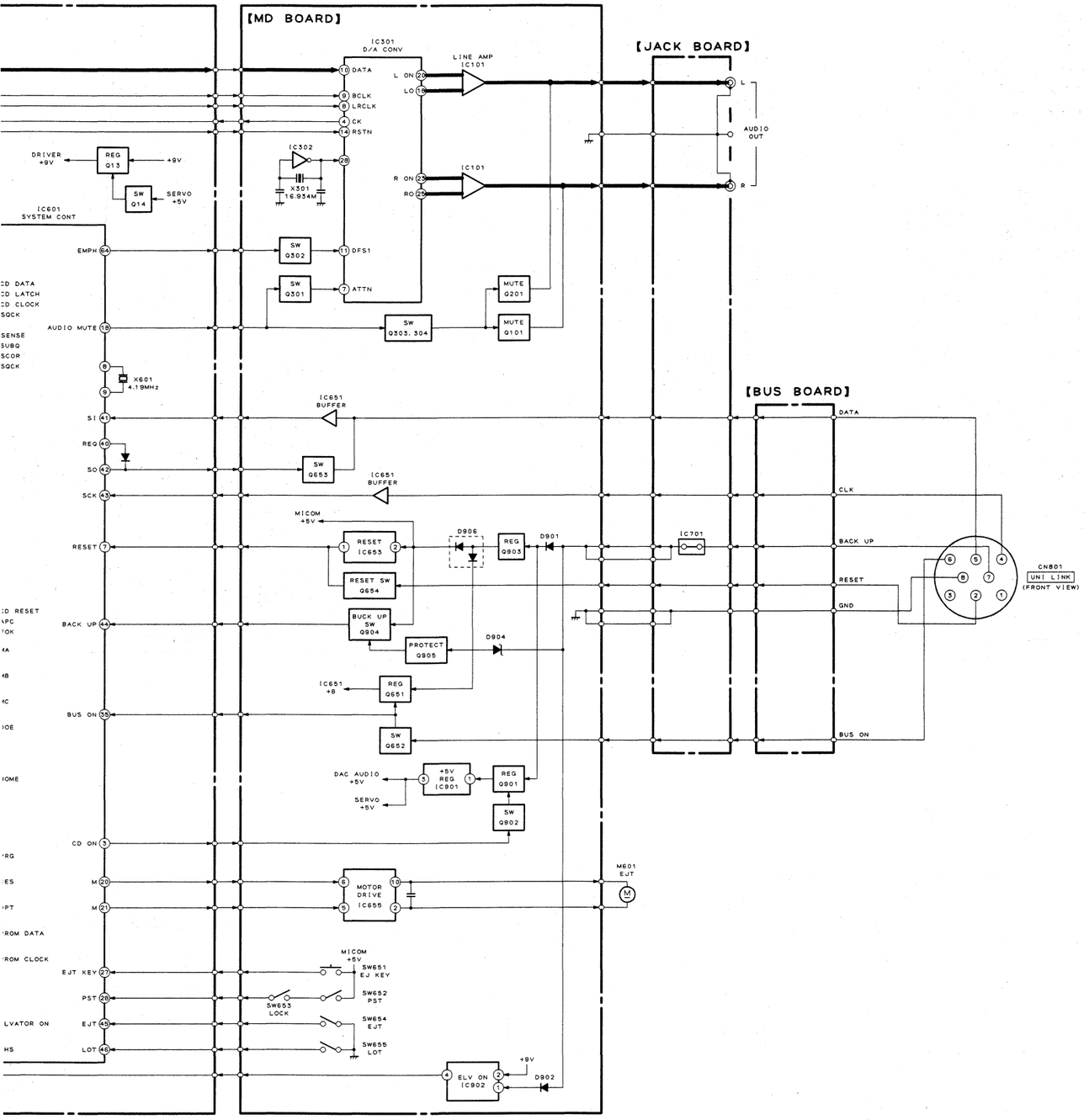


❶ TP RF
0.2 V/div

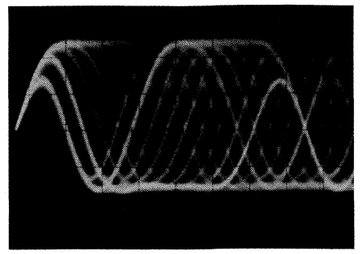
❷ IC11 pin
1 V, 1 μs



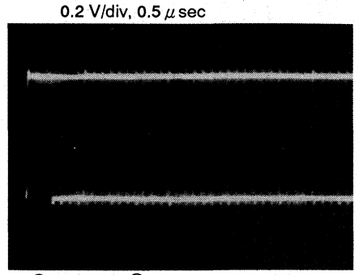
❸ IC11 pin
0.2 Vp-p,



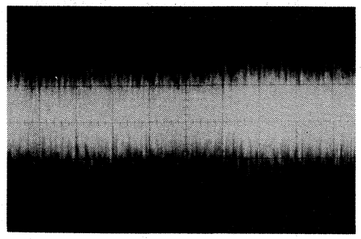
• Waveforms



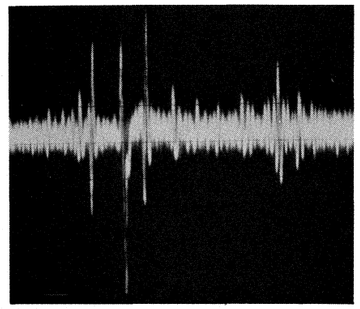
❶ TP RF
0.2 V/div, 0.5 μsec



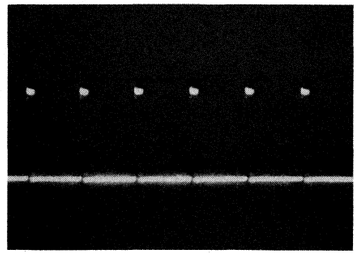
❷ IC11 pin ⑧
1 V, 1 μsec



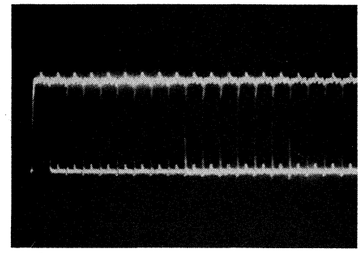
❸ IC11 pin ①
0.2 Vp-p, 5 msec



❹ IC11 pin ㉜
0.1 Vp-p, 5 msec



❺ IC13 pin ④
2 Vp-p, 5 μsec



❻ IC301 pin ⑩
2 Vp-p, 1 μsec

4-4. FORMER TYPE PRINTED WIRING BOARDS

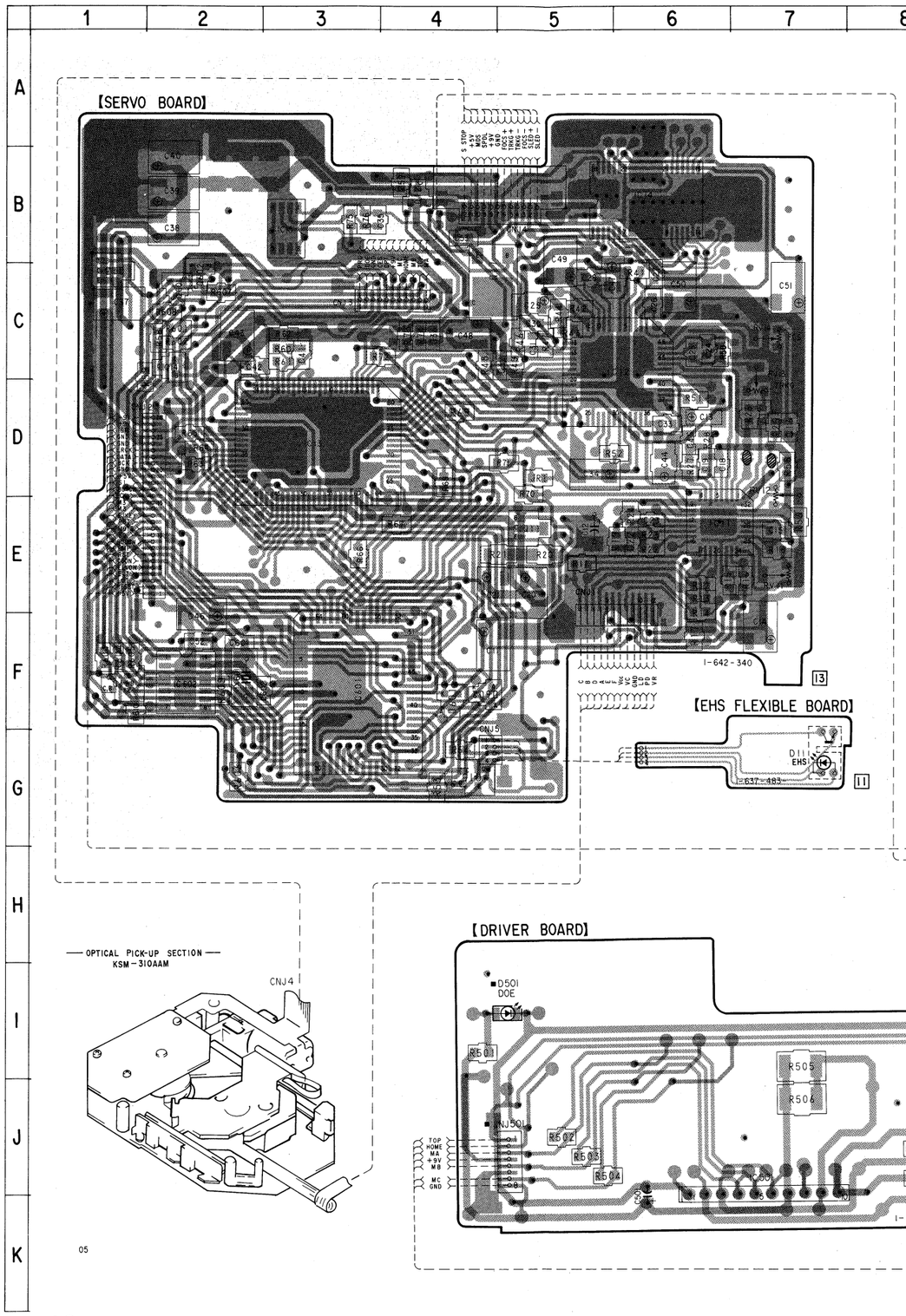
• See page 32 for Semiconductor Lead Layouts.

• **Semiconductor Location**

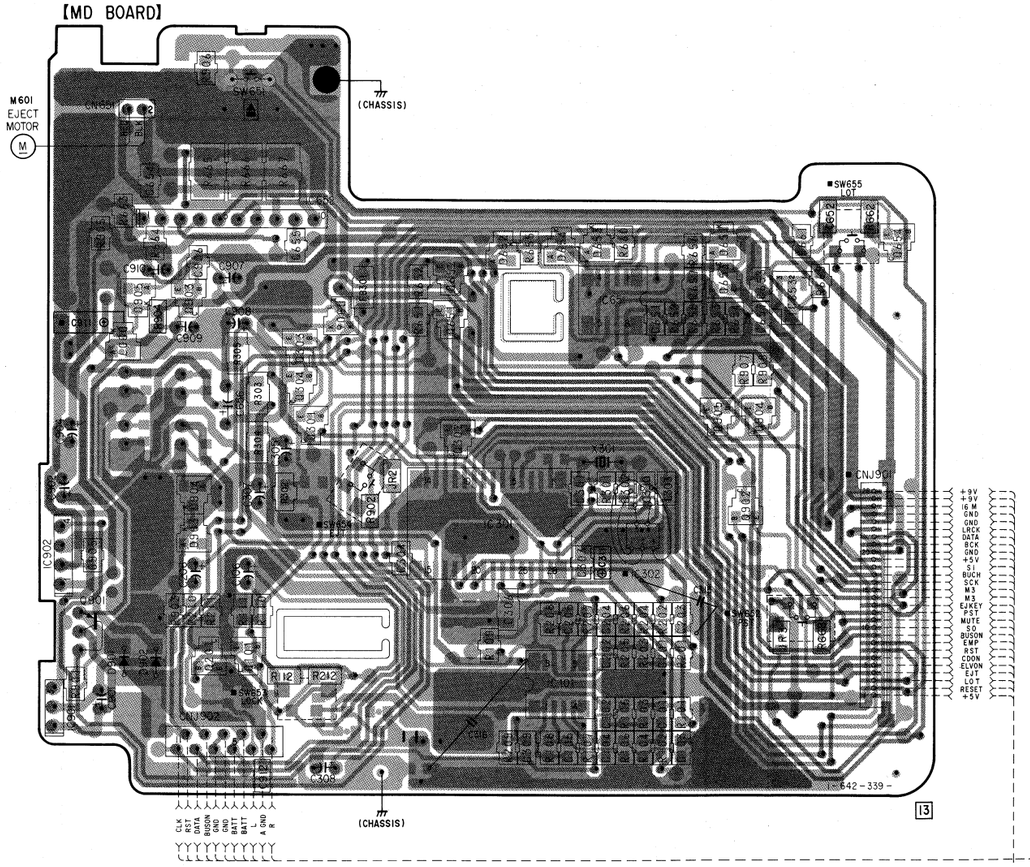
Ref. No.	Location
D11	G-7
D301	E-10
D302	F-11
D303	F-11
D401	J-20
D451	H-17
D501	I-5
D601	F-4
D602	F-4
D651	C-13
D652	C-12
D653	C-12
D654	C-12
D901	F-9
D902	F-9
D903	E-9
D904	E-9
D905	C-9
D906	C-11
D907	D-9
IC11	E-6
IC12	C-6
IC13	D-3
IC14	B-6
IC15	B-3
IC101	F-12
IC301	E-12
IC302	E-13
IC501	J-7
IC601	F-3
IC602	F-2
IC651	C-13
IC652	C-10
IC653	C-14
IC901	F-8
IC902	E-9
Q11	E-5
Q12	B-4
Q13	C-1
Q14	C-2
Q15	G-4
Q16	F-1
Q17	C-4
Q101	F-10
Q201	F-10
Q301	D-10
Q302	D-11
Q303	D-10
Q304	D-10
Q401	J-19
Q402	K-19
Q403	J-20
Q404	J-16
Q601	C-2
Q602	C-2
Q651	C-11
Q652	C-11
Q653	C-13
Q654	C-15
Q901	F-9
Q902	E-14
Q903	C-9
Q904	D-14
Q905	D-13

Note:

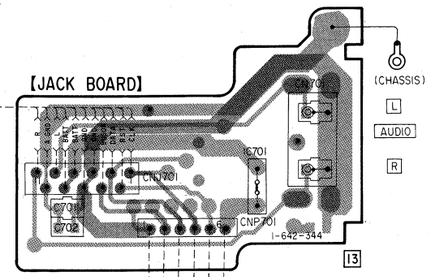
- ■ : parts mounted on the conductor side.
- ● : Through hole.
- ▒ : Pattern on the side which is seen.
- ▒ : Pattern of the rear side.



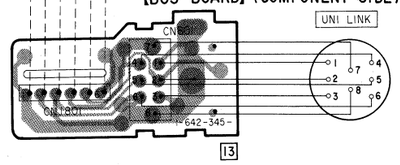
【MD BOARD】



【JACK BOARD】

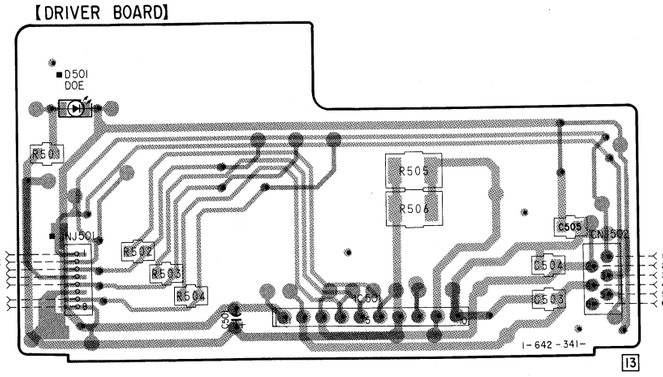


【BUS BOARD】(COMPONENT SIDE)

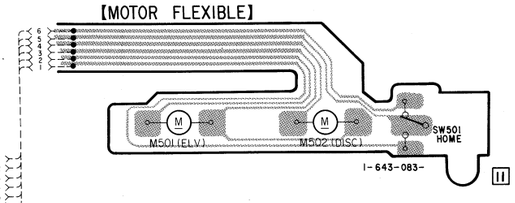


【EHS FLEXIBLE BOARD】

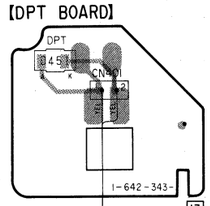
【DRIVER BOARD】



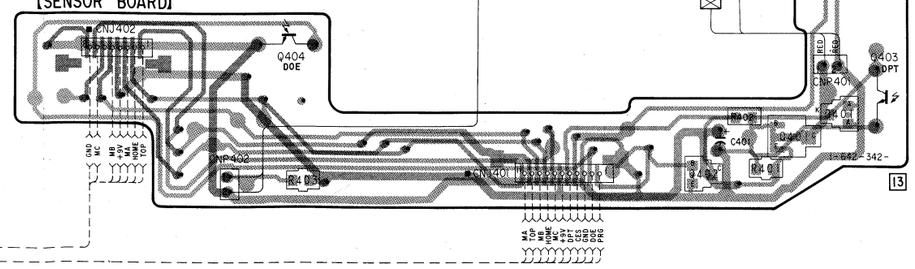
【MOTOR FLEXIBLE】



【DPT BOARD】

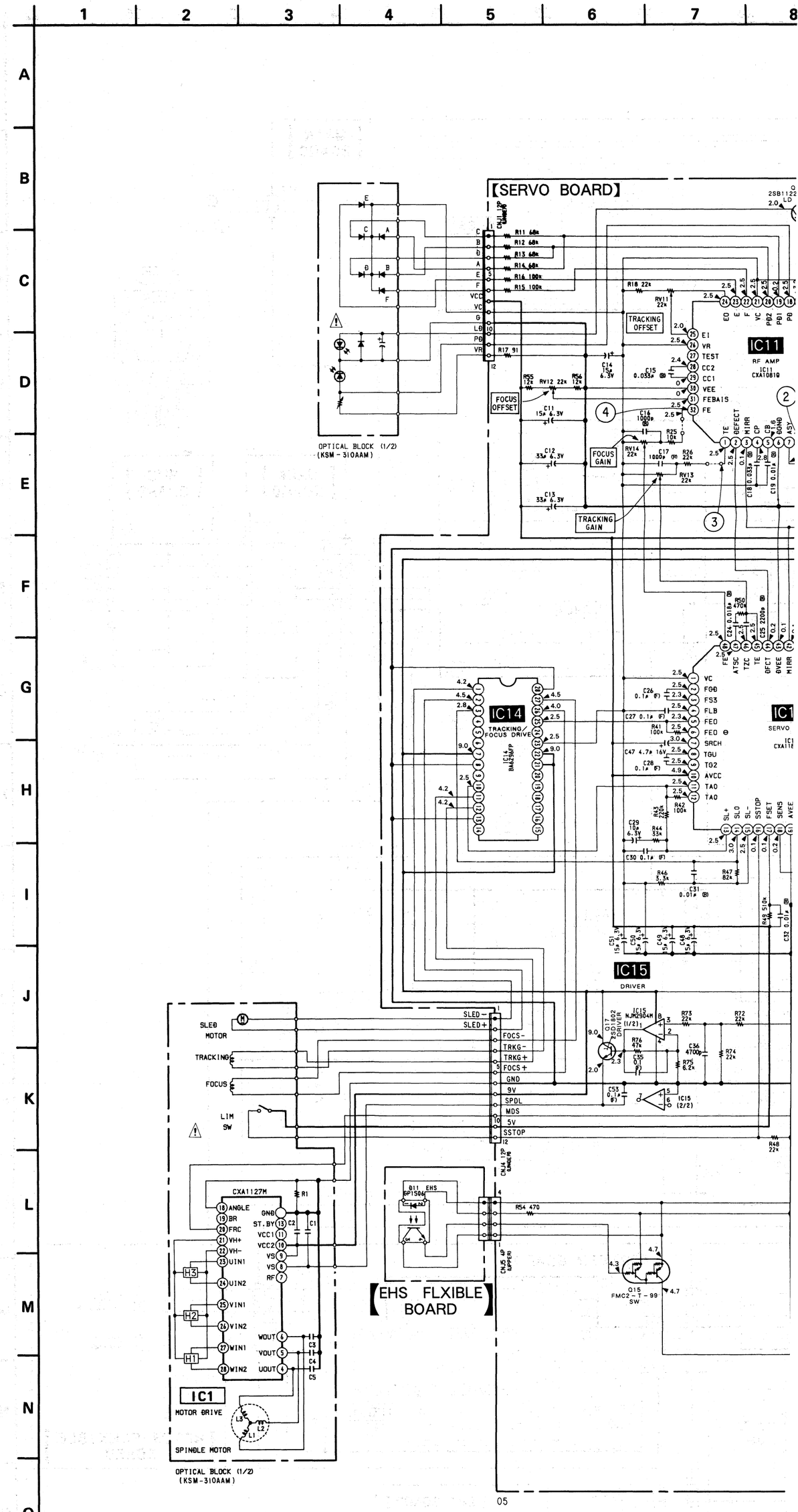


【SENSOR BOARD】

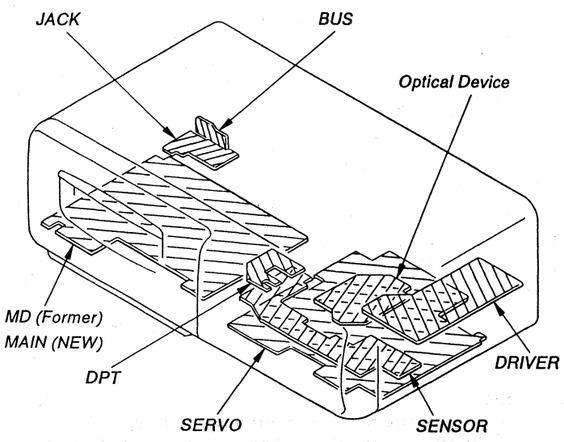


4-5. FORMER TYPE SCHEMATIC DIAGRAM

• See page 14 for IC Block Diagrams, page 17 for Waveforms.



• **Circuit Boards Location**



Note:

- All capacitors are in μF unless otherwise noted. pF: μμF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and ¼ W or less unless specified.

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

- ▬▬ : B + Line.
- ▭ : panel designation.
- ▭ : adjustment for repair.
- Power voltage is dc 14.4 V and fed with regulated dc power supply from CNP1.
- Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.
- Voltages are taken with a VOM (10 MΩ/V). Voltage variations may be noted due to normal production tolerances.
- Wavefroms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to wavefroms.
- Signal path. ⇨ : CD

8 9 10 11 12 13 14 15 16 17 18 19

【MD BOARD】

IC652
MOTOR DRIVE
IC652
LB1641

IC11
RF AMP
IC11
CXA1081Q

IC12
SERVO CONT
IC12
CXA1182Q-Z

IC13
SIGNAL PROCESSOR
IC13
CXD2500AQ

IC601
SYSTEM CONT
IC601
μPD75116GF-F42

IC602
RAM

IC302
DIGITAL FILTER

【SENSOR BOARD】

【DPT BOARD】

16 17 18 19 20 21 22 23 24 25 26

A B C D E F G H I J K L M N O

【MD BOARD】

IC652 MOTOR DRIVE

IC651 BUFFER

IC653 RESET

IC902 SW

IC901 +5V REG

IC302 DIGITAL FILTER

IC301 D/A CONV

IC101 LINE AMP

IC101 LINE AMP

IC501 MOTOR DRIVE

【JACK BOARD】

【BUS BOARD】

【SENSOR BOARD】

【DRIVER BOARD】

【MOTOR FLEXIBLE BOARD】

【DPT BOARD】

CNBOI CONTROL (FRONT VIEW)

M501---ELV
M502---BISC

FORMER

【SERVO BOARD】

OPTICAL PICK-UP BLOCK (KSM-310AAM)

【EHS FLXIBLE BOARD】

IC1 MOTOR ÐRIVE

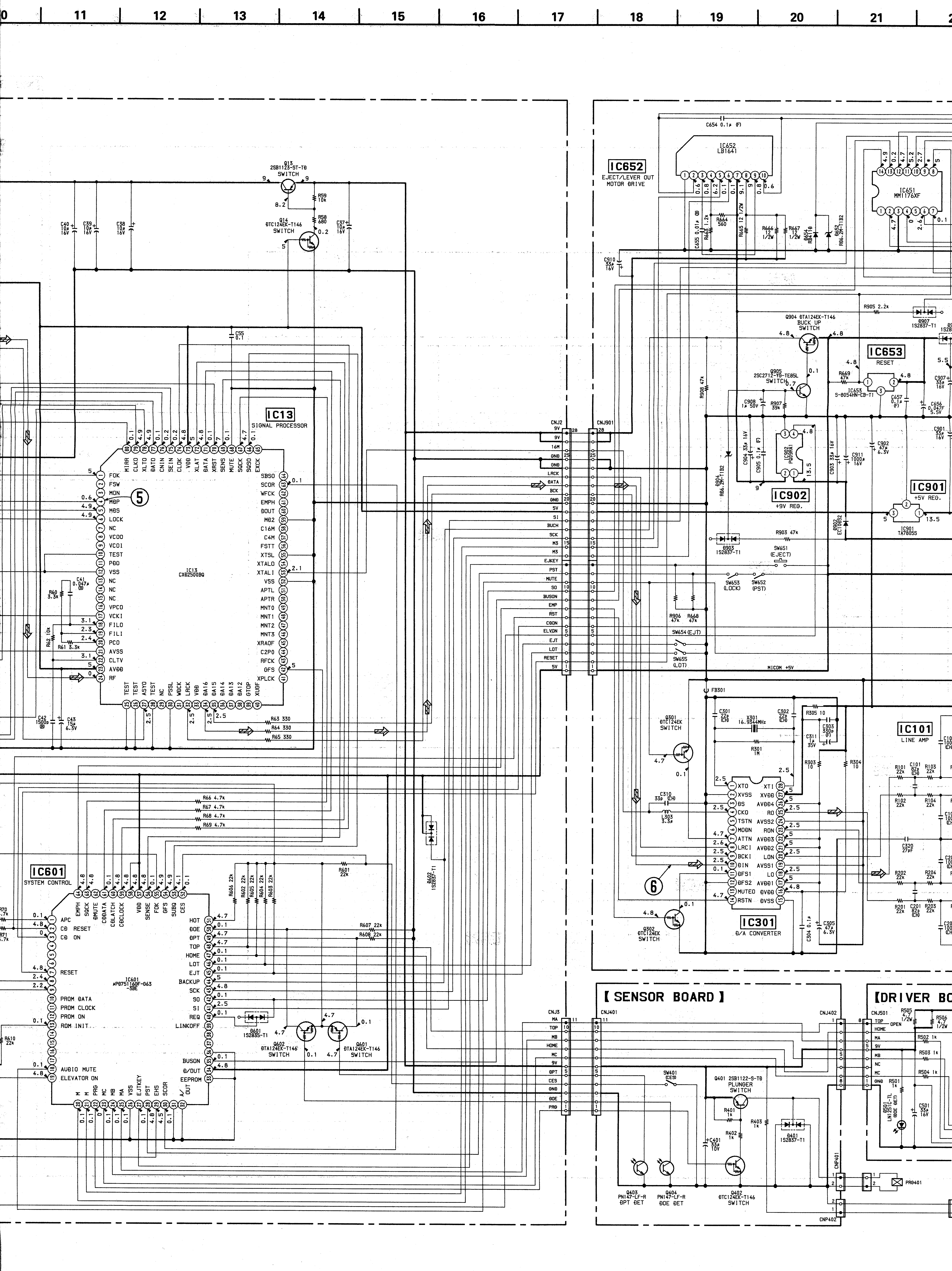
IC11 RF AMP

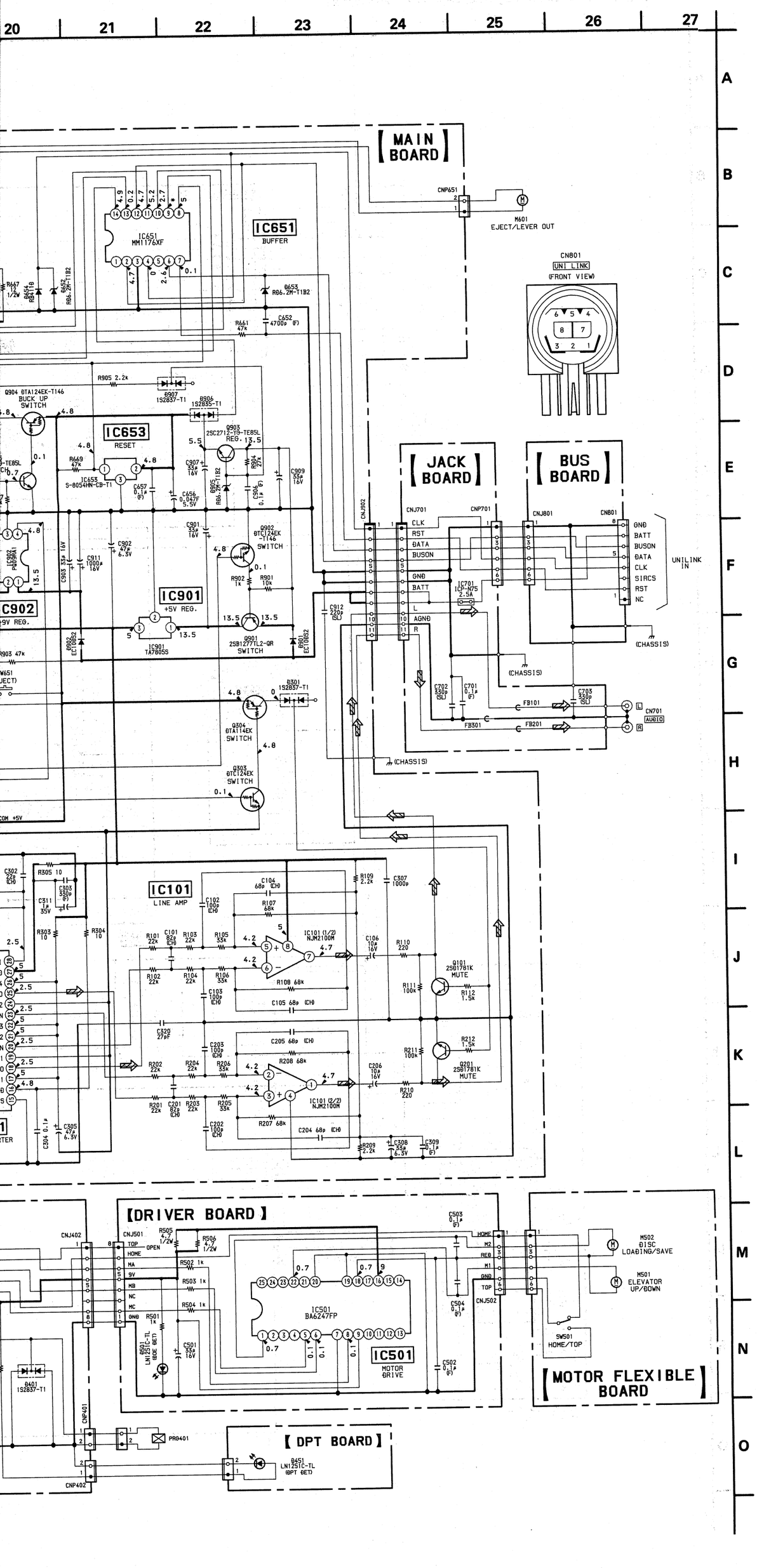
IC12 SERVO CONTROL

IC14 TRACKING/ FOCUS ÐRIVE

IC15 ÐRIVER

IC601 SYSTEM CONTROL


IC601 SYSTEM CONTROL
IC13 SIGNAL PROCESSOR
IC652 EJECT/LEVER OUT MOTOR DRIVE
IC653 RESET
IC902 +9V REG.
IC901 +5V REG.
IC101 LINE AMP
IC301 D/A CONVERTER
[SENSOR BOARD]
[DRIVER BO



Note:

- All capacitors are in µF unless otherwise noted. pF: µµF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and ¼ W or less unless otherwise specified.

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

- ▬▬ : B + Line.
- ▭ : panel designation.
- ▭ : adjustment for repair.
- Power voltage is dc 14.4 V and fed with regulated dc power supply from CNP1.
- Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.
- Voltages are taken with a VOM (10 MΩ/V).
  Voltage variations may be noted due to normal production tolerances.
- Wavefroms are taken with a oscilloscope.
  Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to wavefroms.
- Signal path.
  ⇨ : CD

4-7. NEW TYPE PRINTED WIRING BOARDS

【SERVO BOARD】

【MAIN BOARD】

【JACK BOARD】

【EHS FLEXIBLE BOARD】

【DRIVER BOARD】

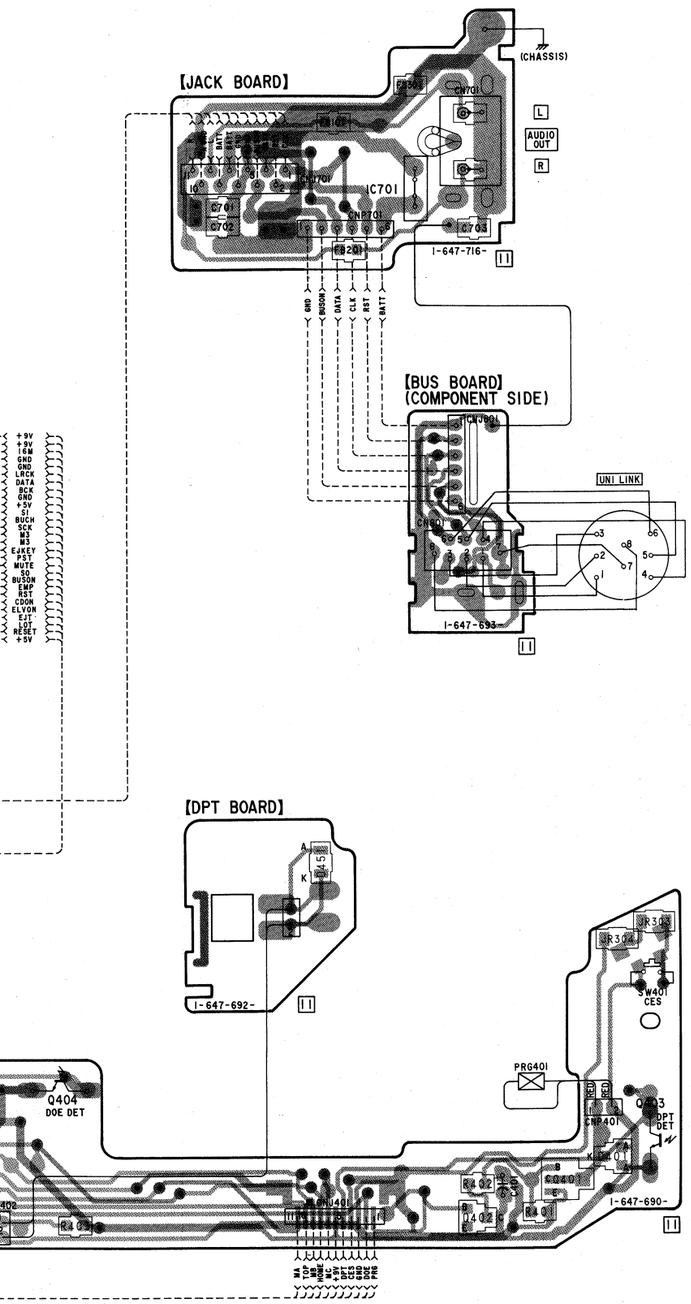
【MOTOR FLEXIBLE】

【DPT BOARD】

【SENSOR BOARD】

— OPTICAL DEVICE SECTION —
KSM-310AAM

16	17	18	19	20	21



• Semiconductor Location

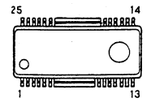
Ref. No.	Location
D11	G-7
D301	E-10
D401	J-20
D451	H-18
D501	I-5
D601	F-4
D602	F-4
D652	C-12
D653	C-11
D654	C-12
D901	F-9
D902	F-9
D903	E-10
D904	E-10
D905	C-9
D906	C-10
D907	D-9
IC11	E-6
IC12	C-6
IC13	D-3
IC14	B-6
IC15	B-3
IC101	F-12
IC301	E-12
IC501	I-6
IC601	F-3
IC651	C-13
IC652	C-10
IC653	C-14
IC901	F-9
IC902	E-9
IC701	C-18
Q11	E-5
Q12	B-4
Q13	C-1
Q14	C-2
Q15	G-4
Q16	F-1
Q17	C-4
Q101	F-10
Q201	F-10
Q301	D-10
Q302	D-12
Q303	D-10
Q304	D-10
Q401	J-19
Q402	J-19
Q403	J-20
Q404	I-16
Q601	C-2
Q602	C-2
Q901	F-9
Q902	E-14
Q903	C-10
Q904	D-14
Q905	D-13

Note:

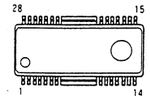
- ■ : parts mounted on the conductor side.
- ● : Through hole.
- ▒ : Pattern on the side which is seen.
- ▒ : Pattern of the rear side.

• Semiconductor Lead Layouts

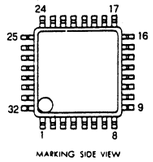
BA6247FP



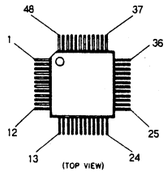
BA6296FP



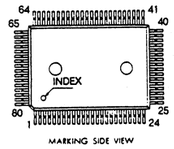
CXA1081Q



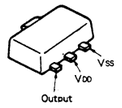
CXA1182QZ



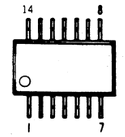
CXD2500BQ



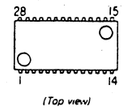
S-8054-HN-CB-S



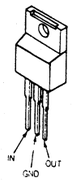
MM1176XF



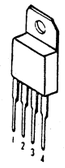
SM5871AS



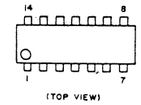
TA7805S



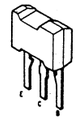
PQ09RA1



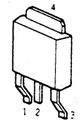
X24C16S1



2SA1428-Y

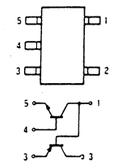


2SD1802

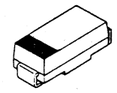


1. BASE
2. COLLECTOR
3. EMITTER
4. COLLECTOR

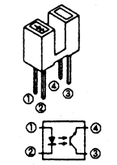
FMC2



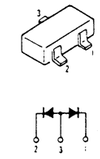
EC10DS2



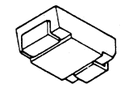
GP1S06
SG220



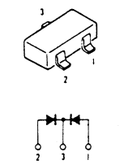
1S2836



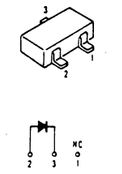
LN1251C



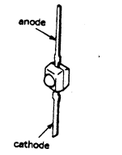
MA152WK



RB411D
RD6.2M-B2



PN147-LF-R



NEW

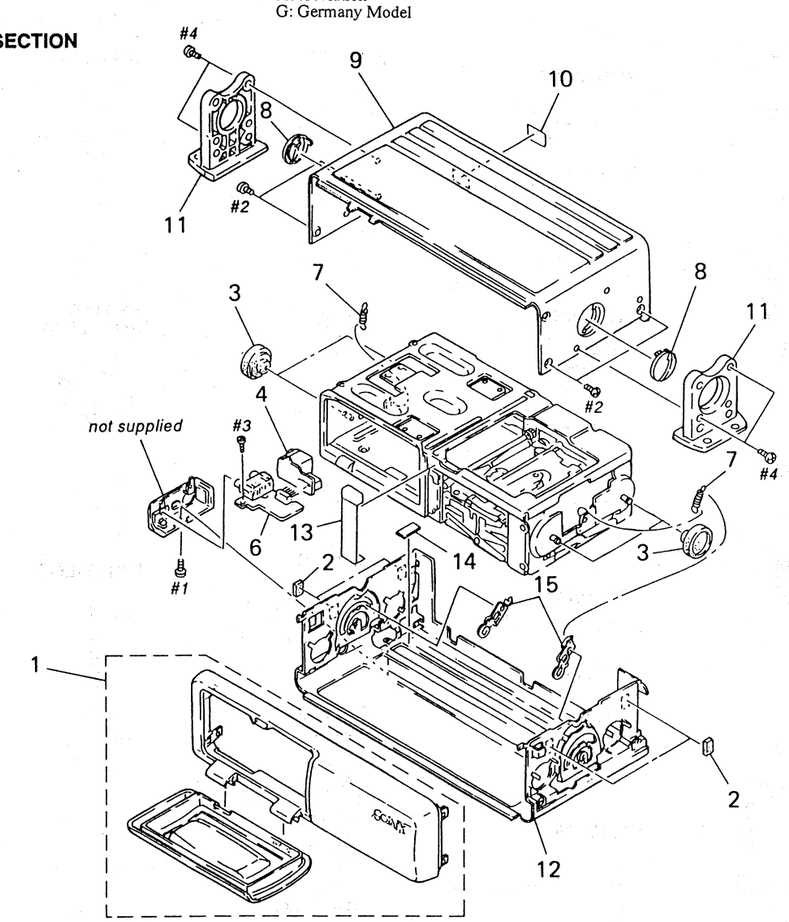
SECTION 5
EXPLODED VIEWS

NOTE:

- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Color Indication of Appearance Parts
  Example:
  KNOB, BALANCE (WHITE) . . . (RED)
  ↑ ↑
  Parts Color Cabinet's Color
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list is given in the last of this parts list.
- Abbreviation
  G: Germany Model

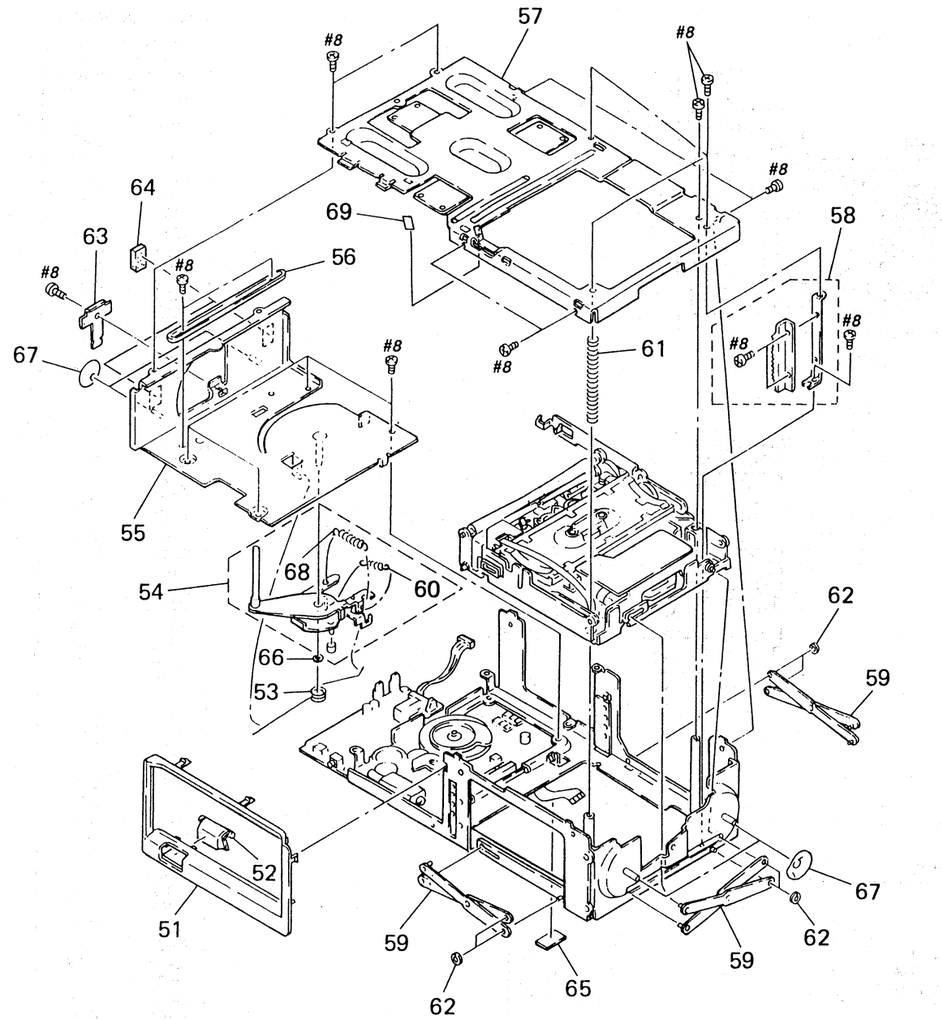
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

(1) CASE SECTION



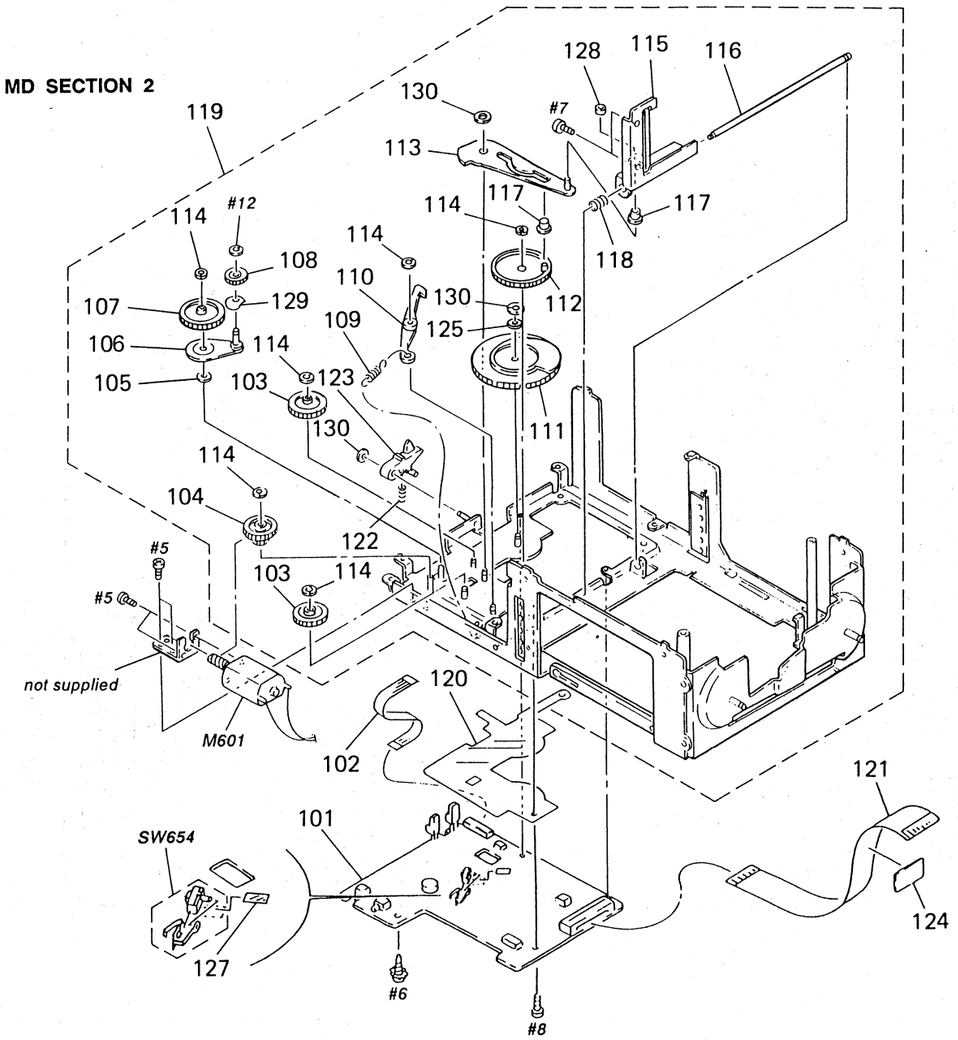
Ref. No.	Part No.	Description	Remark
1	X-3366-627-1	PANEL ASSY, FRONT (US)	
1	X-3366-628-1	PANEL ASSY, FRONT (AEP, G, E)	
2	3-385-834-01	SPACER (CASE)	
3	3-375-501-01	DAMPER (CNG)	
* 4	1-642-345-11	BUS BOARD (FORMER)	
* 4	1-647-693-11	BUS BOARD (NEW)	
* 6	1-642-344-11	JACK BOARD (FORMER)	
* 6	1-647-716-11	JACK BOARD (NEW)	
7	3-368-778-01	SPRING (FL), TENSION	
8	3-375-504-01	LEVER (SPRING)	
* 9	3-375-502-31	CASE (UPPER)	
* 10	4-885-838-00	LABEL, CLASS 1 (AEP)	
* 11	3-375-508-01	BRACKET (300)	
* 12	3-375-503-01	CASE (LOWER)	
13	3-372-331-01	SHEET (ESCUTCHEON)	
* 14	3-368-780-01	SHEET (PC BOARD)	
15	X-3364-882-1	ARM (SPRING) ASSY	

(2) MD SECTION 1



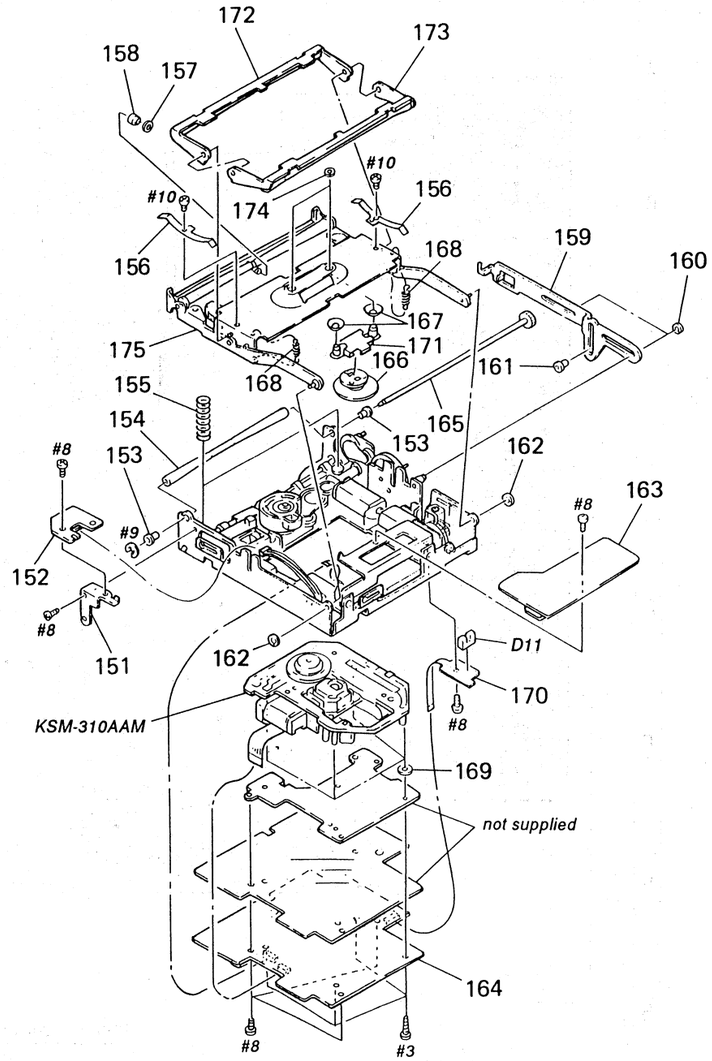
Ref. No.	Part No.	Description	Remark
* 51	3-364-436-01	ESCUTCHEON	
52	3-364-437-01	BUTTON (EJ)	
53	3-364-478-01	SPRING (EJ)	
54	X-3362-332-1	LEVER (EJ) ASSY	
* 55	X-3362-334-1	CHASSIS (MZ) ASSY	
* 56	3-364-434-01	GUIDE (MZ)	
* 57	X-3362-347-1	COVER (MD) ASSY	
58	X-3362-488-1	RACK ASSY	
* 59	X-3362-348-1	LEVER (X) ASSY	
60	3-568-814-00	SPRING, TENSION	
61	3-370-364-01	SPRING, COMPRESSION	
62	3-377-719-01	WASHER, POLYETHYLENE	
* 63	3-364-410-03	BRACKET (TR)	
64	3-350-124-01	CUSHION (EJECT)	
65	9-911-844-XX	CUSHION, BATTERY	
66	3-377-720-01	WASHER, POLYETHYLENE	
67	3-385-808-01	SHEET, PROTECTION, DAMPER	
68	3-382-553-02	SPRING (EJ), TENSION	
* 69	3-346-962-01	CUSHION (EJ)	

(3) MD SECTION 2



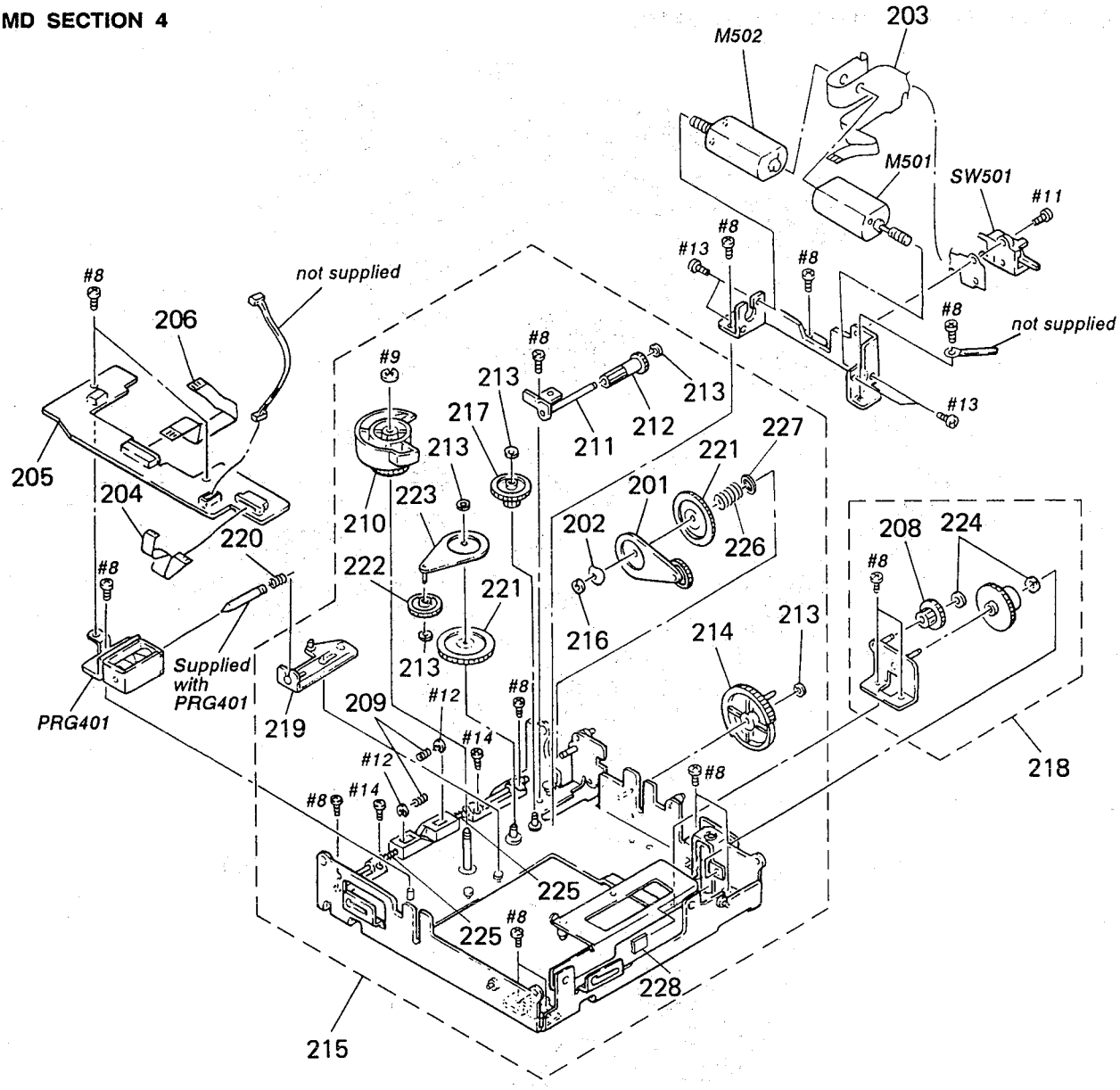
Ref. No.	Part No.	Description	Remark
* 101	A-3273-767-A	MD BOARD, COMPLETE (FORMER)	
* 101	A-3295-444-A	MAIN BOARD, COMPLETE (NEW)	
102	1-642-838-11	JACK FLEXIBLE BOARD	
103	3-364-420-01	GEAR (M)	
104	3-364-413-01	WHEEL (B), WORM	
105	3-701-437-01	WASHER	
106	X-3364-526-2	LEVER (KMZ) ASSY	
107	3-364-417-01	GEAR (L)	
108	3-364-415-01	GEAR (KS)	
109	3-531-866-01	SPRING, TENSION	
110	3-364-433-01	STOPPER (DR)	
111	3-364-411-01	GEAR (EJ), CAM	
112	3-364-432-01	GEAR (DR)	
* 113	X-3364-527-1	LEVER (DR) ASSY	
114	3-377-719-01	WASHER, POLYETHYLENE	
* 115	X-3364-525-1	SLIDER (DR) ASSY	
* 116	3-364-502-01	SHAFT (SDR)	
117	3-364-506-01	ROLLER (SL)	
118	3-568-315-01	SPRING, COMPRESSION	
* 119	X-3364-556-1	CHASSIS SUB ASSY, MD	
* 120	3-368-567-01	SHEET (MD), INSULATING	
121	1-639-551-11	EV FLEXIBLE BOARD	
122	3-370-385-01	SPRING, COMPRESSION	
* 123	3-364-431-01	LEVER (MZ LOCK)	
124	9-911-844-XX	CUSHION, BATTERY	
125	3-373-013-01	SPRING (EJ CAM)	
* 127	4-920-366-01	SPACER (S)	
128	3-379-490-11	WASHER, POLYETHYLENE	
129	3-364-387-11	SPRING (F)	
130	3-377-720-21	WASHER, POLYETHYLENE	
M601	X-3362-325-1	MOTOR ASSY (ELEVATOR)	
SW654	1-571-754-31	SWITCH, PUSH (1 KEY) (EJECT DET)	

(4) MD SECTION 3



Ref. No.	Part No.	Description	Remark
* 151	3-368-565-01	BRACKET (DPT)	
* 152	1-642-343-11	DPT BOARD (FORMER)	
* 152	1-647-692-11	DPT BOARD (NEW)	
153	3-364-421-01	BEARING (ROLLER)	
154	3-323-231-11	ROLLER (LOWER)	
155	3-364-508-01	SPRING, COMPRESSION	
156	3-375-290-01	SPRING (DH)	
157	3-341-752-11	WASHER, POLYETHYLENE	
158	3-364-504-01	ROLLER (RA)	
* 159	3-364-380-01	LEVER, SLIDE	
160	3-377-720-11	WASHER, POLYETHYLENE	
161	3-364-506-01	ROLLER (SL)	
162	3-377-719-01	WASHER, POLYETHYLENE	
* 163	1-642-341-11	DRIVER BOARD (FORMER)	
* 163	A-3295-443-A	DRIVER BOARD, COMPLETE (NEW)	
* 164	A-3273-766-A	SERVO BOARD, COMPLETE (FORMER)	
* 164	A-3295-473-A	SERVO BOARD, COMPLETE (NEW)	
165	X-3362-345-1	GEAR ASSY, ROLLER	
166	3-380-759-02	PLATE (C), CHUCK	
167	3-364-387-01	SPRING (F)	
168	3-371-504-01	SPRING, TENSION	
* 169	3-360-121-31	SPACER (W)	
170	1-637-483-11	EHS FLEXIBLE BOARD	
171	X-3364-480-2	BRACKET (CP) ASSY	
172	X-3364-482-2	ARM (DH) ASSY	
173	X-3364-483-2	ARM (DH2) ASSY	
174	3-342-940-01	WASHER (M)	
175	X-3366-564-1	ARM (R) SERVICE ASSY	
D11	8-719-988-47	DIODE GP1S06 (FORMER)	
D11	8-749-924-17	DIODE PHOTO INTERRUPTER SG-220 (NEW)	

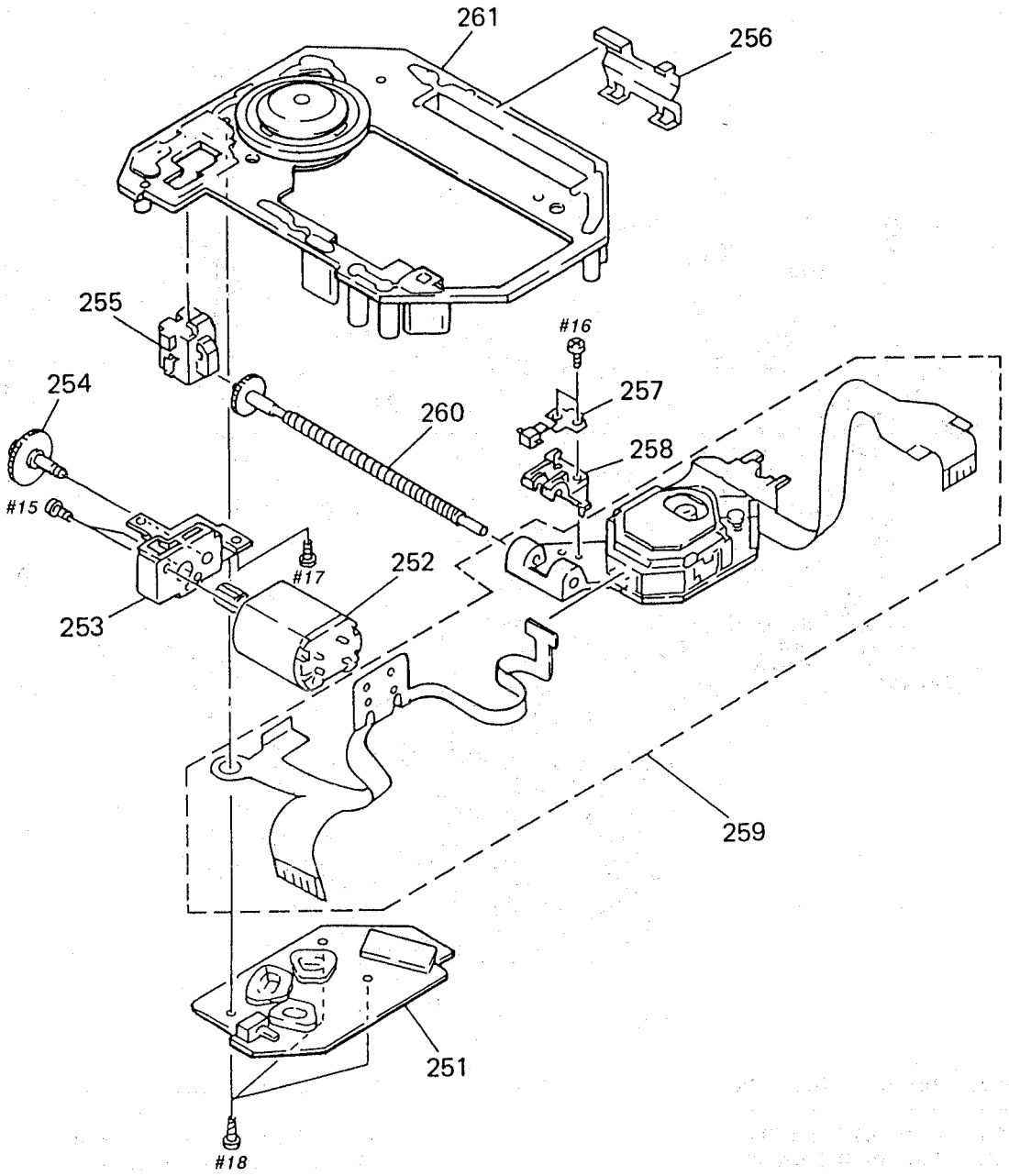
(5) MD SECTION 4



Ref. No.	Part No.	Description	Remark
201	X-3364-535-3	GEAR (KW) ASSY	
202	3-364-387-01	SPRING (F)	
203	1-643-083-11	MOTOR FLEXIBLE BOARD	
204	1-642-972-11	DRIVER FLEXIBLE BOARD	
* 205	A-3295-441-A	SENSOR BOARD, COMPLETE (NEW)	
* 205	1-642-342-11	SENSOR BOARD (FORMER)	
206	1-642-931-11	SENSOR FLEXIBLE BOARD	
208	X-3365-420-4	WHEEL (E) ASSY, WORM	
209	3-485-239-00	SPRING, COMPRESSION	
210	3-364-419-01	GEAR (R), CAM	
211	X-3364-530-1	BRACKET (WWR) ASSY	
212	3-364-416-01	WHEEL (R), WORM	
213	3-377-719-01	WASHER, POLYETHYLENE	
214	3-364-418-01	GEAR (SL)	
* 215	X-3364-555-5	CHASSIS SUB ASSY, EV	
216	3-377-719-11	WASHER, POLYETHYLENE	

Ref. No.	Part No.	Description	Remark
217	3-364-505-01	WHEEL (C), WORM	
218	X-3362-485-1	GEAR ASSY, EV	
219	X-3364-531-1	SLIDER (KR) ASSY	
220	3-353-804-01	SPRING, COMPRESSION	
221	3-364-417-01	GEAR (L)	
222	3-364-422-01	GEAR (K)	
223	X-3364-529-1	LEVER (KRA) ASSY	
224	3-321-813-01	WASHER, COTTER POLYETHYLENE	
225	3-308-717-00	SPRING, COMPRESSION	
226	3-388-479-01	SPRING, COMPRESSION	
227	3-701-441-11	POLY, WASHER DIA.4	
* 228	3-317-054-01	SPACER, E	
M501	X-3362-325-1	MOTOR ASSY (ELV)	
M502	X-3362-325-1	MOTOR ASSY (DISC LOAD/SAVE)	
PRG401	1-454-580-11	SOLENOID, PLUNGER	
SW501	1-571-300-31	SWITCH, ROTARY	

(6) OPTICAL PICK-UP BLOCK (KSM-310AAM)



Ref. No.	Part No.	Description	Remark
251	8-835-456-01	MOTOR, DC SSC-02E01S	
252	X-2625-210-1	GEAR ASSY, SLED MOTOR	
* 253	2-625-513-01	BASE, DRIVING	
254	2-625-507-01	GEAR (B2)	
* 255	A-4910-348-B	RETAINER ASSY, THRUST	
* 256	2-625-514-01	COVER, FLEXIBLE	
257	2-625-516-01	SPRING (A), FEED	
258	2-625-515-01	RACK (AT)	
⚠259	8-848-178-11	OPTICAL KSS-310A PICK-UP	
260	X-2625-209-1	SCREW ASSY, SLED	
261	X-2625-270-2	OMD CHASSIS ASSY	

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

SECTION 6
ELECTRICAL PARTS LIST

BUS EHS JACK SERVO

6-1. FORMER TYPE

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms.
  METAL: Metal-film resistor
  METAL OXIDE: Metal Oxide-film resistor
  F: nonflammable
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u: μ, for example:
  uA...: μA..., uPA...: μPA...,
  uPB...: μPB..., uPC...: μPC...,
  uPD...: μPD...
- CAPACITORS
  uF: μF
- COILS
  uH: μH

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

When including parts by reference number, please include the board name.

Ref. No.	Part No.	Description		Remark
*	1-642-345-11	BUS BOARD		
		**********		
		< CONNECTOR >		
CN801	1-580-907-11	PLUG, CONNECTOR (CONTOL)		
		< JACK >		
* CNJ801	1-566-968-11	HOUSING, CONNECTOR (PC BOARD) 6P		
**********				
	1-637-483-11	EHS FLEXIBLE BOARD		
		**********		
		< DIODE >		
D11	8-719-988-47	DIODE GP1S06 (EHS)		
**********				
*	1-642-344-11	JACK BOARD		
		**********		
		< CAPACITOR >		
C701	1-163-038-00	CERAMIC CHIP 0.1uF		25V
C702	1-163-003-11	CERAMIC CHIP 330PF	10%	50V
		< CONNECTOR >		
CN701	1-580-441-11	JACK, PIN 2P (AUDIO)		
		< JACK >		
CNJ701	1-573-549-11	SOCKET, CONNECTOR 11P		
* CNP701	1-566-971-11	PIN, CONNECTOR (PC BOARD) 6P		
		< IC >		
IC701	1-532-984-11	LINK, IC (ICP-N50)		
**********				

Ref. No.	Part No.	Description		Remark
*	A-3273-766-A	SERVO BOARD, COMPLETE		
		**********		
		< CAPACITOR >		
C11	1-128-021-11	ELECT CHIP 15uF		6.3V
C12	1-135-162-21	TANTALUM CHIP 33uF	20%	6.3V
C13	1-135-162-21	TANTALUM CHIP 33uF	20%	6.3V
C14	1-128-021-11	ELECT CHIP 15uF		6.3V
C15	1-163-989-11	CERAMIC CHIP 0.033uF	10%	25V
C16	1-163-009-11	CERAMIC CHIP 0.001uF	10%	50V
C17	1-163-009-11	CERAMIC CHIP 0.001uF	10%	50V
C18	1-163-989-11	CERAMIC CHIP 0.033uF	10%	25V
C19	1-164-232-11	CERAMIC CHIP 0.01uF		50V
C20	1-128-021-11	ELECT CHIP 15uF		6.3V
C21	1-128-021-11	ELECT CHIP 15uF		6.3V
C22	1-163-093-00	CERAMIC CHIP 10PF	5%	50V
C23	1-163-037-11	CERAMIC CHIP 0.022uF	10%	25V
C24	1-163-024-00	CERAMIC CHIP 0.018uF	10%	50V
C25	1-164-161-11	CERAMIC CHIP 0.0022uF	10%	100V
C26	1-163-038-00	CERAMIC CHIP 0.1uF		25V
C27	1-163-038-00	CERAMIC CHIP 0.1uF		25V
C28	1-163-038-00	CERAMIC CHIP 0.1uF		25V
C29	1-135-157-21	TANTALUM CHIP 10uF	20%	6.3V
C30	1-163-038-00	CERAMIC CHIP 0.1uF		25V
C31	1-164-232-11	CERAMIC CHIP 0.01uF		50V
C32	1-164-232-11	CERAMIC CHIP 0.01uF		50V
C33	1-163-038-00	CERAMIC CHIP 0.1uF		25V
C34	1-135-162-21	TANTALUM CHIP 33uF	20%	6.3V
C35	1-164-004-11	CERAMIC CHIP 0.1uF	10%	25V
C36	1-163-017-00	CERAMIC CHIP 0.0047uF	5%	50V
C37	1-128-031-11	ELECT CHIP 10uF		16V
C38	1-128-031-11	ELECT CHIP 10uF		16V
C39	1-128-031-11	ELECT CHIP 10uF		16V
C40	1-128-031-11	ELECT CHIP 10uF		16V
C41	1-163-809-11	CERAMIC CHIP 0.047uF	10%	25V

SERVO

Ref. No.	Part No.	Description			Remark
C42	1-163-011-11	CERAMIC CHIP	0.0015uF	10%	50V
C43	1-128-021-11	ELECT CHIP	15uF		6.3V
C44	1-135-145-11	TANTALUM CHIP	0.47uF	10%	35V
C45	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C46	1-135-162-21	TANTALUM CHIP	33uF	20%	6.3V
C47	1-135-155-21	TANTALUM CHIP	4.7uF	10%	16V
C48	1-128-021-11	ELECT CHIP	15uF		6.3V
C49	1-128-021-11	ELECT CHIP	15uF		6.3V
C50	1-128-021-11	ELECT CHIP	15uF		6.3V
C51	1-128-021-11	ELECT CHIP	15uF		6.3V
C52	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C53	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C601	1-163-239-11	CERAMIC CHIP	33PF	5%	50V
C602	1-163-239-11	CERAMIC CHIP	33PF	5%	50V
		< JACK >			
CNJ5	1-580-438-21	CONNECTOR, FPC 4P			
		< DIODE >			
D601	8-719-104-34	DIODE 1S2836			
D602	8-719-400-18	DIODE MA152WK			
		< IC >			
IC11	8-752-033-14	IC CXA1081Q			
IC12	8-752-037-48	IC CXA1182Q-Z			
IC13	8-752-337-26	IC CXD2500AQ			
IC14	8-759-518-59	IC BA6296FP			
IC15	8-759-981-69	IC LM2904M			
IC601	8-759-065-43	IC uPD75116GF-F42-3BE			
IC602	8-759-513-44	IC XC24C16SI			
		< TRANSISTOR >			
Q11	8-729-804-41	TRANSISTOR 2SB1122-S			
Q12	8-729-901-00	TRANSISTOR DTC124EK			
Q13	8-729-807-35	TRANSISTOR 2SB1123			
Q14	8-729-901-00	TRANSISTOR DTC124EK			
Q15	8-729-921-25	TRANSISTOR FMC2			
Q16	8-729-921-25	TRANSISTOR FMC2			
Q17	8-729-807-12	TRANSISTOR 2SD1802S			
Q601	8-729-901-05	TRANSISTOR DTA124EK			
Q602	8-729-901-05	TRANSISTOR DTA124EK			
		< RESISTOR >			
R11	1-216-093-00	METAL CHIP	68K	5%	1/10W
R12	1-216-093-00	METAL CHIP	68K	5%	1/10W
R13	1-216-093-00	METAL CHIP	68K	5%	1/10W
R14	1-216-093-00	METAL CHIP	68K	5%	1/10W
R15	1-216-097-00	METAL CHIP	100K	5%	1/10W
R16	1-216-097-00	METAL CHIP	100K	5%	1/10W
R17	1-216-024-00	METAL GLAZE	91	5%	1/10W
R18	1-216-081-00	METAL CHIP	22K	5%	1/10W
R19	1-216-073-00	METAL CHIP	10K	5%	1/10W
R20	1-216-150-00	METAL GLAZE	10	5%	1/8W
R21	1-216-152-00	METAL GLAZE	12	5%	1/8W
R22	1-216-077-00	METAL CHIP	15K	5%	1/10W
R23	1-216-079-00	METAL CHIP	18K	5%	1/10W
R24	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R25	1-216-073-00	METAL CHIP	10K	5%	1/10W
R26	1-216-081-00	METAL CHIP	22K	5%	1/10W
R27	1-216-097-00	METAL CHIP	100K	5%	1/10W
R28	1-216-073-00	METAL CHIP	10K	5%	1/10W
R41	1-216-097-00	METAL CHIP	100K	5%	1/10W
R42	1-216-097-00	METAL CHIP	100K	5%	1/10W
R43	1-216-105-00	METAL CHIP	220K	5%	1/10W
R44	1-216-085-00	METAL CHIP	33K	5%	1/10W
R46	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R47	1-216-095-00	METAL CHIP	82K	5%	1/10W
R48	1-216-081-00	METAL CHIP	22K	5%	1/10W
R49	1-216-114-00	METAL GLAZE	510K	5%	1/10W
R50	1-216-113-00	METAL CHIP	470K	5%	1/10W
R51	1-216-097-00	METAL CHIP	100K	5%	1/10W
R52	1-216-099-00	METAL CHIP	120K	5%	1/10W
R53	1-216-073-00	METAL CHIP	10K	5%	1/10W
R54	1-216-041-00	METAL CHIP	470	5%	1/10W
R55	1-216-075-00	METAL CHIP	12K	5%	1/10W
R56	1-216-075-00	METAL CHIP	12K	5%	1/10W
R57	1-216-073-00	METAL CHIP	10K	5%	1/10W
R58	1-216-045-00	METAL CHIP	680	5%	1/10W
R59	1-216-073-00	METAL CHIP	10K	5%	1/10W
R60	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R61	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R62	1-216-073-00	METAL CHIP	10K	5%	1/10W
R63	1-216-037-00	METAL CHIP	330	5%	1/10W
R64	1-216-037-00	METAL CHIP	330	5%	1/10W
R65	1-216-037-00	METAL CHIP	330	5%	1/10W
R66	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R67	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R68	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R69	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R70	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R71	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R72	1-216-081-00	METAL CHIP	22K	5%	1/10W
R73	1-216-081-00	METAL CHIP	22K	5%	1/10W
R74	1-216-081-00	METAL CHIP	22K	5%	1/10W
R75	1-216-068-00	METAL CHIP	6.2K	5%	1/10W
R76	1-216-089-00	METAL CHIP	47K	5%	1/10W
R601	1-216-081-00	METAL CHIP	22K	5%	1/10W

FORMER

Ref. No.	Part No.	Description			Remark
R602	1-216-081-00	METAL CHIP	22K	5%	1/10W
R603	1-216-081-00	METAL CHIP	22K	5%	1/10W
R604	1-216-081-00	METAL CHIP	22K	5%	1/10W
R605	1-216-081-00	METAL CHIP	22K	5%	1/10W
R606	1-216-081-00	METAL CHIP	22K	5%	1/10W
R607	1-216-081-00	METAL CHIP	22K	5%	1/10W
R608	1-216-081-00	METAL CHIP	22K	5%	1/10W
R609	1-216-089-00	METAL CHIP	47K	5%	1/10W
R610	1-216-081-00	METAL CHIP	22K	5%	1/10W
		< VARIABLE RESISTOR >			
RV11	1-230-871-11	RES, ADJ, METAL 22K			
RV12	1-230-871-11	RES, ADJ, METAL 22K			
RV13	1-230-871-11	RES, ADJ, METAL 22K			
RV14	1-230-871-11	RES, ADJ, METAL 22K			
		< VIBRATOR >			
X601	1-577-273-11	OSCILLATOR, CERAMIC 4.19MHz			
**********					
*	1-642-343-11	DPT BOARD			
		**********			
		< DIODE >			
D451	8-719-404-19	LED LN1251C (DPT)			
**********					
*	1-642-341-11	DRIVER BOARD			
		**********			
		< CAPACITOR >			
C501	1-124-034-51	ELECT	33uF	20%	16V
C503	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C504	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C505	1-163-038-00	CERAMIC CHIP	0.1uF		25V
		< JACK >			
CNJ502	1-565-340-11	SOCKET, CONNECTOR 6P			
		< DIODE >			
D501	8-719-404-19	LED LN1251C (DOE)			
		< IC >			
IC501	8-759-511-17	IC BA6247N			
		< RESISTOR >			
R501	1-216-049-00	METAL CHIP	1K	5%	1/10W
R502	1-216-049-00	METAL CHIP	1K	5%	1/10W
R503	1-216-049-00	METAL CHIP	1K	5%	1/10W
R504	1-216-049-00	METAL CHIP	1K	5%	1/10W
R505	1-218-232-91	METAL GLAZE	4.7	10%	1/2W
R506	1-218-232-91	METAL GLAZE	4.7	10%	1/2W
**********					
*	A-3273-767-A	MD BOARD, COMPLETE			
		**********			
		< CAPACITOR >			
C101	1-163-115-00	CERAMIC CHIP	82PF	5%	50V
C102	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C103	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C104	1-163-113-00	CERAMIC CHIP	68PF	5%	50V
C105	1-163-113-00	CERAMIC CHIP	68PF	5%	50V
C106	1-126-157-11	ELECT	10uF	20%	16V
C201	1-163-115-00	CERAMIC CHIP	82PF	5%	50V
C202	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C203	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C204	1-163-113-00	CERAMIC CHIP	68PF	5%	50V
C205	1-163-113-00	CERAMIC CHIP	68PF	5%	50V
C206	1-126-157-11	ELECT	10uF	20%	16V
C301	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C302	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C303	1-163-263-11	CERAMIC CHIP	330PF	5%	50V
C304	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C305	1-126-154-11	ELECT	47uF	20%	6.3V
C306	1-162-568-11	CERAMIC CHIP	0.33uF		25V
C307	1-126-154-11	ELECT	47uF	20%	6.3V
C308	1-124-034-51	ELECT	33uF	20%	16V
C309	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C310	1-163-239-11	CERAMIC CHIP	33PF	5%	50V
C311	1-135-179-21	TANTAL. CHIP	2.2uF	20%	16V
C315	1-162-207-31	CERAMIC	22PF	5%	50V
C316	1-162-293-21	CERAMIC	820PF	5%	50V
C651	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C652	1-163-029-11	CERAMIC CHIP	0.0047uF		50V
C653	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C654	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C655	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C656	1-125-733-21	CAP, DOUBLE LAYER	0.047F		5.5V
C657	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C901	1-124-034-51	ELECT	33uF	20%	16V
C902	1-126-154-11	ELECT	47uF	20%	6.3V
C904	1-124-034-51	ELECT	33uF	20%	16V
C905	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C906	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C907	1-124-034-51	ELECT	33uF	20%	16V
C908	1-126-301-11	ELECT	1uF	20%	50V
C909	1-124-034-51	ELECT	33uF	20%	16V
C910	1-124-034-51	ELECT	33uF	20%	16V
C911	1-124-360-00	ELECT	1000uF	20%	16V

MD

Ref. No.	Part No.	Description	Remark
		< JACK >	
CNJ901	1-580-106-21	CONNECTOR, FPC 28P	
CNJ902	1-573-549-11	SOCKET, CONNECTOR 11P	
		< DIODE >	
D651	8-719-400-18	DIODE MA152WK	
D652	8-719-106-08	DIODE RD6.2M-B2	
D653	8-719-106-08	DIODE RD6.2M-B2	
D654	8-719-975-40	DIODE RB411D	
D901	8-719-210-33	DIODE EC10DS2	
D902	8-719-210-33	DIODE EC10DS2	
D903	8-719-400-18	DIODE MA152WK	
D904	8-719-106-08	DIODE RD6.2M-B2	
D905	8-719-106-08	DIODE RD6.2M-B2	
D906	8-719-104-34	DIODE 1S2836	
D907	8-719-400-18	DIODE MA152WK	
		< FERRITE BEAD >	
FB301	1-543-469-11	BEAD, FERRITE (CHIP)	
		< IC >	
IC101	8-759-710-55	IC NJM2100M	
IC301	8-759-060-19	IC SM5871AS	
IC302	8-759-243-19	IC TC7SU04F	
IC651	8-759-981-65	IC LM2903M	
IC652	8-759-822-09	IC LB1641	
IC653	8-759-940-45	IC S-8054HN-CB	
IC901	8-759-231-53	IC TA7805S	
IC902	8-759-054-12	IC PQ09RA1	
		< COIL >	
L303	1-410-198-51	INDUCTOR CHIP 3.3uH	
		< TRANSISTOR >	
Q101	8-729-921-73	TRANSISTOR 2SD1781K-QR	
Q201	8-729-921-73	TRANSISTOR 2SD1781K-QR	
Q301	8-729-901-00	TRANSISTOR DTC124EK	
Q302	8-729-901-00	TRANSISTOR DTC124EK	
Q303	8-729-901-00	TRANSISTOR DTC124EK	
Q304	8-729-901-05	TRANSISTOR DTA124EK	
Q651	8-729-901-05	TRANSISTOR DTA124EK	
Q652	8-729-230-49	TRANSISTOR 2SC2712-G	
Q653	8-729-230-49	TRANSISTOR 2SC2712-G	
Q654	8-729-230-49	TRANSISTOR 2SC2712-G	
Q901	8-729-205-95	TRANSISTOR 2SA1428-Y	
Q902	8-729-901-00	TRANSISTOR DTC124EK	
Q903	8-729-230-49	TRANSISTOR 2SC2712-G	
Q904	8-729-901-05	TRANSISTOR DTA124EK	
Q905	8-729-230-49	TRANSISTOR 2SC2712-G	
		< RESISTOR >	
R101	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R102	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R103	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R104	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R105	1-216-085-00	METAL CHIP 33K 5% 1/10W	
R106	1-216-085-00	METAL CHIP 33K 5% 1/10W	
R107	1-216-093-00	METAL CHIP 68K 5% 1/10W	
R108	1-216-093-00	METAL CHIP 68K 5% 1/10W	
R109	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R110	1-216-033-00	METAL CHIP 220 5% 1/10W	
R111	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R112	1-216-053-00	METAL CHIP 1.5K 5% 1/10W	
R201	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R202	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R203	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R204	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R205	1-216-085-00	METAL CHIP 33K 5% 1/10W	
R206	1-216-085-00	METAL CHIP 33K 5% 1/10W	
R207	1-216-093-00	METAL CHIP 68K 5% 1/10W	
R208	1-216-093-00	METAL CHIP 68K 5% 1/10W	
R209	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R210	1-216-033-00	METAL CHIP 220 5% 1/10W	
R211	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R212	1-216-053-00	METAL CHIP 1.5K 5% 1/10W	
R301	1-216-121-00	METAL CHIP 1M 5% 1/10W	
R302	1-216-029-00	METAL CHIP 150 5% 1/10W	
R303	1-216-150-00	METAL GLAZE 10 5% 1/8W	
R304	1-216-150-00	METAL GLAZE 10 5% 1/8W	
R305	1-216-150-00	METAL GLAZE 10 5% 1/8W	
R651	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R652	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R653	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R654	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R655	1-216-105-00	METAL CHIP 220K 5% 1/10W	
R656	1-216-063-00	METAL CHIP 3.9K 5% 1/10W	
R657	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R658	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R659	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R660	1-216-105-00	METAL CHIP 220K 5% 1/10W	
R661	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R662	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R663	1-216-051-00	METAL CHIP 1.2K 5% 1/10W	
R664	1-216-043-00	METAL CHIP 560 5% 1/10W	
R665	1-218-279-11	METAL GLAZE 12 5% 1/2W	
R666	1-218-279-11	METAL GLAZE 12 5% 1/2W	
R667	1-218-279-11	METAL GLAZE 12 5% 1/2W	
R668	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R669	1-216-089-00	METAL CHIP 47K 5% 1/10W	

FORMER

Ref. No.	Part No.	Description			Remark
R901	1-216-073-00	METAL CHIP	10K	5%	1/10W
R902	1-216-049-00	METAL CHIP	1K	5%	1/10W
R903	1-216-089-00	METAL CHIP	47K	5%	1/10W
R904	1-216-083-00	METAL CHIP	27K	5%	1/10W
R905	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R906	1-216-089-00	METAL CHIP	47K	5%	1/10W
R907	1-216-081-00	METAL CHIP	39K	5%	1/10W
R908	1-216-089-00	METAL CHIP	47K	5%	1/10W
		< SWITCH >			
SW651	1-571-532-51	SWITCH, TACTIL (EJECT)			
SW652	1-571-754-31	SWITCH, PUSH (1 KEY) (PST)			
SW653	1-571-754-31	SWITCH, PUSH (1 KEY) (LOCK)			
SW654	1-571-754-31	SWITCH, PUSH (1 KEY) (EJT)			
SW655	1-571-754-31	SWITCH, PUSH (1 KEY) (LOT)			
		< VIBRATOR >			
X301	1-567-908-11	VIBRATOR, CRYSTAL 16.9344MHz			
**********					
	1-643-083-11	MOTOR FLEXIBLE, BOARD			
		**********			
		< MOTOR >			
M501	X-3362-325-1	MOTOR, ASSY (ELV)			
M502	X-3362-325-1	MOTOR, ASSY (DISC LOAD/SAVE)			
		< SWITCH >			
SW501	1-571-300-31	SWITCH, ROTARY (HOME)			
**********					
*	1-642-342-11	SENSOR BOARD			
		**********			
		< CAPACITOR >			
C401	1-124-242-00	ELECT	33uF	20%	25V
		< CONNECTOR >			
* CNP402	1-568-951-51	PIN, CONNECTOR (STRAIGHT) 2P			
		< DIODE >			
D401	8-719-400-18	DIODE MA152WK			
		< TRANSISTOR >			
Q401	8-729-804-41	TRANSISTOR 2SB1122-S			
Q402	8-729-901-00	TRANSISTOR DTC124EK			
Q403	8-729-402-08	TRANSISTOR PN147-LF			
Q404	8-729-402-08	TRANSISTOR PN147-LF			

Ref. No.	Part No.	Description			Remark
		< RESISTOR >			
R401	1-216-049-00	METAL CHIP	1K	5%	1/10W
R402	1-216-049-00	METAL CHIP	1K	5%	1/10W
R403	1-216-049-00	METAL CHIP	1K	5%	1/10W
		< SWITCH >			
SW401	1-571-754-31	SWITCH, PUSH (1 KEY) (CES)			
**********					

BUS DPT DRIVER EHS FLEXIBLE JACK

6-2. NEW TYPE

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms.
  METAL:Metal-film resistor.
  METAL OXIDE: Metal oxide-film resistor.
  F:nonflammable
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u:μ, for example:
  uA..: μA.. uPA..: μPA..
  uPB..: μPB.. uPC..: μPC.. uPD..: μPD..
- CAPACITORS
  uF: μF
- COILS
  uH: μH
- Abbreviation
  G: Germany Model

The components identified by mark ⚠ or dotted line with mark. ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board.

Ref.No.	Part No.	Description			Remark
	* 1-647-693-11	BUS BOARD			
		*********			
		< CAPACITOR >			
C703	1-162-288-31	CERAMIC	330PF	10%	50V
**********					
*	1-647-692-11	DPT BOARD			
		*********			
		< DIODE >			
D451	8-719-404-19	LED LN1251C (DPT)			
**********					
*	A-3295-443-A	DRIVER BOARD, COMPLETE			
		**********			
		< CAPACITOR >			
C501	1-124-034-51	ELECT	33uF	20%	16V
C502	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C503	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C504	1-163-038-00	CERAMIC CHIP	0.1uF		25V
		< JACK >			
CNJ501	1-566-524-21	CONNECTOR, FPC (ZIF) 8P			
CNJ502	1-565-340-11	SOCKET, CONNECTOR 6P			
		< DIODE >			
D501	8-719-404-19	LED LN1251C (DOE)			
		< IC >			
IC501	8-759-070-68	IC BA6247FP-Y			
		< RESISTOR >			
R501	1-216-049-00	METAL CHIP	1K	5%	1/10W
R502	1-216-049-00	METAL CHIP	1K	5%	1/10W
R503	1-216-049-00	METAL CHIP	1K	5%	1/10W
R504	1-216-049-00	METAL CHIP	1K	5%	1/10W
R505	1-218-232-91	METAL GLAZE	4.7	10%	1/2W
R506	1-218-232-91	METAL GLAZE	4.7	10%	1/2W
**********					
	1-637-483-11	EHS FLEXIBLE BOARD			
		**********			
		< DIODE >			
D11	8-749-924-17	DIODE PHOTO INTERRUPTER SG-220 (EHS)			
**********					
*	1-647-716-11	JACK BOARD			
		**********			
		< CAPACITOR >			
C701	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C702	1-163-263-11	CERAMIC CHIP	330PF	5%	50V
		< CONNECTOR >			
CN701	1-580-441-11	JACK, PIN 2P			
		< JACK >			
CNJ701	1-573-549-11	SOCKET, CONNECTOR 11P			
		< CONNECTOR >			
* CNP701	1-573-484-11	PIN, CONNECTOR (PC BOARD) 6P			
		< IC >			
IC701	1-532-686-00	LI NK, IC	2.7A		

NEW

Ref. No.	Part No.	Description			Remark
		< FERRITE BEAD >			
LB101	1-543-948-11	BEAD, FERRITE (CHIP)			
LB201	1-543-948-11	BEAD, FERRITE (CHIP)			
LB302	1-543-948-11	BEAD, FERRITE (CHIP)			
**********					
*	A-3295-444-A	MAIN BOARD, COMPLETE			
		**********			
		< CAPACITOR >			
C101	1-163-115-00	CERAMIC CHIP	82PF	5%	50V
C102	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C103	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C104	1-163-113-00	CERAMIC CHIP	68PF	5%	50V
C105	1-163-113-00	CERAMIC CHIP	68PF	5%	50V
C106	1-126-157-11	ELECT	10uF	20%	16V
C201	1-163-115-00	CERAMIC CHIP	82PF	5%	50V
C202	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C203	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C204	1-163-113-00	CERAMIC CHIP	68PF	5%	50V
C205	1-163-113-00	CERAMIC CHIP	68PF	5%	50V
C206	1-126-157-11	ELECT	10uF	20%	16V
C301	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C302	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C303	1-163-263-11	CERAMIC CHIP	330PF	5%	50V
C304	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C305	1-126-154-11	ELECT	47uF	20%	6.3V
C306	1-162-568-11	CERAMIC CHIP	0.33uF		25V
C307	1-163-141-00	CERAMIC CHIP	0.001uF	5%	50V
C308	1-124-229-00	ELECT	33uF	20%	10V
C309	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C310	1-163-239-11	CERAMIC CHIP	33PF	5%	50V
C311	1-135-179-21	TANTAL. CHIP	2.2uF	20%	16V
C315	1-163-185-00	CERAMIC CHIP	150PF	5%	50V
C320	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C652	1-163-055-00	CERAMIC CHIP	0.0047uF		50V
C654	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C655	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C656	1-125-733-31	CAP, DOUBLE LAYER 0.047F			
C657	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C901	1-124-034-51	ELECT	33uF	20%	16V
C902	1-126-154-11	ELECT	47uF	20%	6.3V
C903	1-124-034-51	ELECT	33uF	20%	16V
C904	1-124-034-51	ELECT	33uF	20%	16V
C905	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C906	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C907	1-124-034-51	ELECT	33uF	20%	16V
C908	1-126-301-11	ELECT	1uF	20%	50V
C909	1-124-034-51	ELECT	33uF	20%	16V
C910	1-124-034-51	ELECT	33uF	20%	16V
C911	1-124-360-00	ELECT	1000uF	20%	16V
		< JACK >			
CNJ901	1-580-106-21	CONNECTOR, FPC 28P			
CNJ902	1-573-549-11	SOCKET, CONNECTOR 11P			
		< CONNECTOR >			
* CNP651	1-506-998-11	PIN, CONNECTOR (PC BOARD) 2P			
		< DIODE >			
D301	8-719-400-18	DIODE	MA152WK		
D652	8-719-106-08	DIODE	RD6.2M-B2		
D653	8-719-106-08	DIODE	RD6.2M-B2		
D654	8-719-975-40	DIODE	RB411D		
D901	8-719-210-33	DIODE	EC10DS2		
D902	8-719-210-33	DIODE	EC10DS2		
D903	8-719-400-18	DIODE	MA152WK		
D904	8-719-106-08	DIODE	RD6.2M-B2		
D905	8-719-106-08	DIODE	RD6.2M-B2		
D906	8-719-104-34	DIODE	1S2836		
D907	8-719-400-18	DIODE	MA152WK		
		< FERRITE BEAD >			
FB301	1-543-469-11	BEAD, FERRITE (CHIP)			
		< IC >			
IC101	8-759-710-55	IC	NJM2100M		
IC301	8-759-093-98	IC	CXD8451M		
IC651	8-759-096-18	IC	MM1176XF		
IC652	8-759-822-09	IC	LB1641		
IC653	8-759-165-82	IC	PST600E		
IC901	8-759-231-53	IC	TA7805S		
IC902	8-759-054-12	IC	PQ09RA1		
		< JUMPER RESISTOR >			
JR2	1-216-296-00	METAL CHIP	0	5%	1/8W
JR3	1-216-296-00	METAL CHIP	0	5%	1/8W
		< JUMPER RESISTOR >			
JW901	1-218-817-11	METAL GLAZE	3.3	10%	1/2W
JW902	1-218-817-11	METAL GLAZE	3.3	10%	1/2W
JW903	1-218-817-11	METAL GLAZE	3.3	10%	1/2W
JW904	1-218-817-11	METAL GLAZE	3.3	10%	1/2W
		< COIL >			
L303	1-410-999-11	INDUCTOR CHIP	3.3uH		

NEW

MAIN | MOTOR FLEXIBLE | SENSOR

Ref. No.	Part No.	Description			Remark
		< TRANSISTOR >			
Q101	8-729-921-73	TRANSISTOR 2SD1781K-QR			
Q201	8-729-921-73	TRANSISTOR 2SD1781K-QR			
Q301	8-729-424-59	TRANSISTOR UN2212			
Q302	8-729-424-59	TRANSISTOR UN2212			
Q303	8-729-424-59	TRANSISTOR UN2212			
Q304	8-729-424-08	TRANSISTOR UN2111			
Q901	8-729-205-95	TRANSISTOR 2SA1428-Y			
Q902	8-729-424-59	TRANSISTOR UN2212			
Q903	8-729-230-49	TRANSISTOR 2SC2712-YG			
Q904	8-729-424-12	TRANSISTOR UN2112			
Q905	8-729-230-49	TRANSISTOR 2SC2712-YG			
		< RESISTOR >			
R101	1-216-081-00	METAL CHIP	22K	5%	1/10W
R102	1-216-081-00	METAL CHIP	22K	5%	1/10W
R103	1-216-081-00	METAL CHIP	22K	5%	1/10W
R104	1-216-081-00	METAL CHIP	22K	5%	1/10W
R105	1-216-085-00	METAL CHIP	33K	5%	1/10W
R106	1-216-085-00	METAL CHIP	33K	5%	1/10W
R107	1-216-093-00	METAL CHIP	68K	5%	1/10W
R108	1-216-093-00	METAL CHIP	68K	5%	1/10W
R109	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R110	1-216-033-00	METAL CHIP	220	5%	1/10W
R111	1-216-097-00	METAL CHIP	100K	5%	1/10W
R112	1-216-202-00	METAL GLAZE	1.5K	5%	1/8W
R201	1-216-081-00	METAL CHIP	22K	5%	1/10W
R202	1-216-081-00	METAL CHIP	22K	5%	1/10W
R203	1-216-081-00	METAL CHIP	22K	5%	1/10W
R204	1-216-081-00	METAL CHIP	22K	5%	1/10W
R205	1-216-085-00	METAL CHIP	33K	5%	1/10W
R206	1-216-085-00	METAL CHIP	33K	5%	1/10W
R207	1-216-093-00	METAL CHIP	68K	5%	1/10W
R208	1-216-093-00	METAL CHIP	68K	5%	1/10W
R209	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R210	1-216-033-00	METAL CHIP	220	5%	1/10W
R211	1-216-097-00	METAL CHIP	100K	5%	1/10W
R212	1-216-202-00	METAL GLAZE	1.5K	5%	1/8W
R301	1-216-121-00	METAL CHIP	1M	5%	1/10W
R303	1-216-150-00	METAL GLAZE	10	5%	1/8W
R304	1-216-150-00	METAL GLAZE	10	5%	1/8W
R305	1-216-150-00	METAL GLAZE	10	5%	1/8W
R655	1-216-105-00	METAL CHIP	220K	5%	1/10W
R661	1-216-089-00	METAL CHIP	47K	5%	1/10W
R663	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R664	1-216-043-00	METAL CHIP	560	5%	1/10W
R665	1-218-279-11	METAL GLAZE	12	5%	1/2W
R666	1-218-279-11	METAL GLAZE	12	5%	1/2W
R667	1-218-279-11	METAL GLAZE	12	5%	1/2W
R668	1-216-238-00	METAL GLAZE	47K	5%	1/8W
R669	1-216-089-00	METAL CHIP	47K	5%	1/10W
R901	1-216-073-00	METAL CHIP	10K	5%	1/10W
R902	1-216-198-00	METAL CHIP	1K	5%	1/8W
R903	1-216-089-00	METAL CHIP	47K	5%	1/10W
R904	1-216-083-00	METAL CHIP	27K	5%	1/10W
R905	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R906	1-216-089-00	METAL CHIP	47K	5%	1/10W
R907	1-216-236-00	METAL GLAZE	39K	5%	1/8W
R908	1-216-238-00	METAL GLAZE	47K	5%	1/8W
		< SWITCH >			
SW651	1-571-532-51	SWITCH, TACTIL (EJECT)			
SW652	1-571-754-31	SWITCH, PUSH (1 KEY) (PST)			
SW653	1-571-754-31	SWITCH, PUSH (1 KEY) (LOCK)			
SW654	1-571-754-31	SWITCH, PUSH (1 KEY) (EJT)			
SW655	1-571-754-31	SWITCH, PUSH (1 KEY) (LOT)			
		< VIBRATOR >			
X301	1-567-908-11	VIBRATOR, CRYSTAL 16.9344MHz			
**********					
	1-643-083-11	MOTOR FLEXIBLE, BOARD			
		**********			
		< MOTOR >			
M501	X-3362-325-1	MOTOR, ASSY (ELV)			
M502	X-3362-325-1	MOTOR, ASSY (DISC LOAD/SAVE)			
		< SWITCH >			
SW501	1-571-300-31	SWITCH, ROTARY (HOME)			
**********					
*	A-3295-441-A	SENSOR BOARD, COMPLETE			
		**********			
		< CAPACITOR >			
C401	1-124-229-00	ELECT	33uF	20%	10V
		< JACK >			
CNJ401	1-566-527-11	CONNECTOR, FPC (ZIF) 11P			
CNJ402	1-566-524-21	CONNECTOR, FPC (ZIF) 8P			
		< CONNECTOR >			
* CNP401	1-506-998-11	PIN, CONNECTOR (PC BOARD) 2P			
* CNP402	1-564-704-11	PIN, CONNECTOR (SMALL TYPE) 2P			

NEW

Ref. No.	Part No.	Description			Remark
		< DIODE >			
D401	8-719-400-18	DIODE MA152WK			
		< JUMPER RESISTOR >			
JR303	1-216-296-00	METAL CHIP	0	5%	1/8W
JR304	1-216-296-00	METAL CHIP	0	5%	1/8W
		< TRANSISTOR >			
Q401	8-729-804-41	TRANSISTOR	2SB1122-S		
Q402	8-729-424-59	TRANSISTOR	UN2212		
Q403	8-729-402-08	TRANSISTOR	PN147-LF		
Q404	8-729-402-08	TRANSISTOR	PN147-LF		
		< RESISTOR >			
R401	1-216-049-00	METAL CHIP	1K	5%	1/10W
R402	1-216-049-00	METAL CHIP	1K	5%	1/10W
R403	1-216-049-00	METAL CHIP	1K	5%	1/10W
		< SWITCH >			
SW401	1-571-754-31	SWITCH, PUSH (1 KEY) (CES)			
**********					
*	A-3295-473-A	SERVO BOARD, COMPLETE			
		**********			
		< CAPACITOR >			
C11	1-128-535-21	ELECT CHIP	15uF	20%	6.3V
C12	1-135-162-21	TANTALUM CHIP	33uF	20%	6.3V
C13	1-135-162-21	TANTALUM CHIP	33uF	20%	6.3V
C14	1-135-157-21	TANTALUM CHIP	10uF	20%	6.3V
C15	1-163-989-11	CERAMIC CHIP	0.033uF	10%	25V
C16	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C17	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C18	1-163-989-11	CERAMIC CHIP	0.033uF	10%	25V
C19	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C20	1-128-535-21	ELECT CHIP	15uF	20%	6.3V
C21	1-128-535-21	ELECT CHIP	15uF	20%	6.3V
C22	1-163-093-00	CERAMIC CHIP	10PF	5%	50V
C23	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C24	1-163-024-00	CERAMIC CHIP	0.018uF	10%	50V
C25	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
C26	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C27	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C28	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C29	1-135-157-21	TANTALUM CHIP	10uF	20%	6.3V
C30	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C31	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C32	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C33	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C34	1-135-162-21	TANTALUM CHIP	33uF	20%	6.3V
C35	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C36	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C37	1-128-313-11	ELECT CHIP	10uF	20%	16V
C38	1-128-313-11	ELECT CHIP	10uF	20%	16V
C39	1-128-313-11	ELECT CHIP	10uF	20%	16V
C40	1-128-313-11	ELECT CHIP	10uF	20%	16V
C41	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C42	1-163-011-11	CERAMIC CHIP	0.0015uF	10%	50V
C43	1-128-535-21	ELECT CHIP	15uF	20%	6.3V
C44	1-135-145-11	TANTALUM CHIP	0.47uF	10%	35V
C45	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C46	1-135-162-21	TANTALUM CHIP	33uF	20%	6.3V
C47	1-135-155-21	TANTALUM CHIP	4.7uF	10%	16V
C48	1-135-157-21	TANTALUM CHIP	10uF	20%	6.3V
C49	1-135-157-21	TANTALUM CHIP	10uF	20%	6.3V
C50	1-135-157-21	TANTALUM CHIP	10uF	20%	6.3V
C51	1-128-535-21	ELECT CHIP	15uF	20%	6.3V
C52	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C53	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C55	1-163-077-00	CERAMIC CHIP	0.1uF	10%	25V
C56	1-163-087-00	CERAMIC CHIP	4PF		50V
C601	1-163-239-11	CERAMIC CHIP	33PF	5%	50V
C602	1-163-239-11	CERAMIC CHIP	33PF	5%	50V
		< JACK >			
CNJ1	1-691-801-11	SOCKET, CONNECTOR 12P			
CNJ2	1-691-802-11	SOCKET, CONNECTOR 28P			
CNJ3	1-568-236-21	CONNECTOR, FPC (1.0MM) (ZIF) 11P			
CNJ4	1-691-801-11	SOCKET, CONNECTOR 12P			
CNJ5	1-580-438-21	CONNECTOR, FPC 4P			
		< DIODE >			
D601	8-719-104-34	DIODE 1S2836			
D602	8-719-400-18	DIODE MA152WK			
		< IC >			
IC11	8-752-033-14	IC CXA1081Q			
IC12	8-752-037-48	IC CXA1182Q-Z			
IC13	8-752-352-93	IC CXD2500BQ			
IC14	8-759-518-59	IC BA6296FP			
IC15	8-759-981-69	IC LM2904M			
IC601	8-759-170-95	IC uPD75116GF-G63-3BE			
		< JUMPER RESISTOR >			
JR1	1-216-295-00	METAL CHIP	0	5%	1/10W

NEW

SERVO

Ref. No.	Part No.	Description			Remark
		< TRANSISTOR >			
Q11	8-729-804-41	TRANSISTOR	2SB1122-S		
Q12	8-729-424-59	TRANSISTOR	UN2212		
Q13	8-729-807-33	TRANSISTOR	2SB1123		
Q14	8-729-424-59	TRANSISTOR	UN2212		
Q15	8-729-921-25	TRANSISTOR	FMC2		
Q16	8-729-921-25	TRANSISTOR	FMC2		
Q17	8-729-820-68	TRANSISTOR	2SD1802FA-S		
Q601	8-729-424-12	TRANSISTOR	UN2112		
Q602	8-729-424-12	TRANSISTOR	UN2112		
		< RESISTOR >			
R11	1-216-093-00	METAL CHIP	68K	5%	1/10W
R12	1-216-093-00	METAL CHIP	68K	5%	1/10W
R13	1-216-093-00	METAL CHIP	68K	5%	1/10W
R14	1-216-093-00	METAL CHIP	68K	5%	1/10W
R15	1-216-097-00	METAL CHIP	100K	5%	1/10W
R16	1-216-097-00	METAL CHIP	100K	5%	1/10W
R17	1-216-024-00	METAL GLAZE	91	5%	1/10W
R18	1-216-081-00	METAL CHIP	22K	5%	1/10W
R19	1-216-073-00	METAL CHIP	10K	5%	1/10W
R20	1-216-150-00	METAL GLAZE	10	5%	1/8W
R21	1-216-152-00	METAL GLAZE	12	5%	1/8W
R22	1-216-077-00	METAL CHIP	15K	5%	1/10W
R23	1-216-079-00	METAL CHIP	18K	5%	1/10W
R24	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R25	1-216-073-00	METAL CHIP	10K	5%	1/10W
R26	1-216-081-00	METAL CHIP	22K	5%	1/10W
R27	1-216-097-00	METAL CHIP	100K	5%	1/10W
R28	1-216-073-00	METAL CHIP	10K	5%	1/10W
R41	1-216-097-00	METAL CHIP	100K	5%	1/10W
R42	1-216-097-00	METAL CHIP	100K	5%	1/10W
R43	1-216-105-00	METAL CHIP	220K	5%	1/10W
R44	1-216-085-00	METAL CHIP	33K	5%	1/10W
R46	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R47	1-216-095-00	METAL CHIP	82K	5%	1/10W
R48	1-216-081-00	METAL CHIP	22K	5%	1/10W
R49	1-216-114-00	METAL GLAZE	510K	5%	1/10W
R50	1-216-113-00	METAL CHIP	470K	5%	1/10W
R51	1-216-097-00	METAL CHIP	100K	5%	1/10W
R52	1-216-099-00	METAL CHIP	120K	5%	1/10W
R53	1-216-073-00	METAL CHIP	10K	5%	1/10W
R54	1-216-041-00	METAL CHIP	470	5%	1/10W
R55	1-216-075-00	METAL CHIP	12K	5%	1/10W
R56	1-216-075-00	METAL CHIP	12K	5%	1/10W
R57	1-216-073-00	METAL CHIP	10K	5%	1/10W
R58	1-216-045-00	METAL CHIP	680	5%	1/10W
R59	1-216-073-00	METAL CHIP	10K	5%	1/10W

Ref. No.	Part No.	Description			Remark
R60	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R61	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R62	1-216-073-00	METAL CHIP	10K	5%	1/10W
R63	1-216-037-00	METAL CHIP	330	5%	1/10W
R64	1-216-037-00	METAL CHIP	330	5%	1/10W
R65	1-216-037-00	METAL CHIP	330	5%	1/10W
R66	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R67	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R68	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R69	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R70	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R71	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R72	1-216-073-00	METAL CHIP	10K	5%	1/10W
R73	1-216-081-00	METAL CHIP	22K	5%	1/10W
R74	1-216-081-00	METAL CHIP	22K	5%	1/10W
R75	1-216-068-00	METAL CHIP	6.2K	5%	1/10W
R76	1-216-089-00	METAL CHIP	47K	5%	1/10W
R601	1-216-081-00	METAL CHIP	22K	5%	1/10W
R602	1-216-081-00	METAL CHIP	22K	5%	1/10W
R603	1-216-081-00	METAL CHIP	22K	5%	1/10W
R604	1-216-081-00	METAL CHIP	22K	5%	1/10W
R605	1-216-081-00	METAL CHIP	22K	5%	1/10W
R606	1-216-081-00	METAL CHIP	22K	5%	1/10W
R607	1-216-081-00	METAL CHIP	22K	5%	1/10W
R608	1-216-081-00	METAL CHIP	22K	5%	1/10W
R609	1-216-089-00	METAL CHIP	47K	5%	1/10W
R610	1-216-081-00	METAL CHIP	22K	5%	1/10W
		< VARIABLE RESISTOR >			
RV11	1-238-091-11	RES, ADJ, CERMET 22K			
RV12	1-238-091-11	RES, ADJ, CERMET 22K			
RV13	1-238-091-11	RES, ADJ, CERMET 22K			
RV14	1-238-091-11	RES, ADJ, CERMET 22K			
		< VIBRATOR >			
X601	1-577-273-11	OSCILLATOR, CERAMIC 4.19MHz			

****

MISCELLANEOUS

****

102	1-642-838-11	JACK FLEXIBLE BOARD
121	1-639-551-11	EV FLEXIBLE BOARD
203	1-643-083-11	MOTOR FLEXIBLE BOARD
204	1-642-972-11	DRIVER FLEXIBLE BOARD
206	1-642-931-11	SENSOR FLEXIBLE BOARD
251	8-835-456-01	MOTOR, DC SSC-02E01S
⚠259	8-848-178-11	DEVICE, OPTICAL KSS-310A PICK-UP
M501	X-3362-325-1	MOTOR ASSY (EJECT)
M502	X-3362-325-1	MOTOR ASSY (DISC LOAD/SAVE)

The components identified by mark ⚠ or dotted line with mark. ⚠ are critical for safety. Replace only with part number specified.

NEW

Ref. No.	Part No.	Description	Remark
M601	X-3362-325-1	MOTOR ASSY (ELEVATOR)	
PRG401	1-454-580-11	SOLENOID, PLUNGER	
SW501	1-571-300-31	SWITCH, ROTARY	

****

ACCESSORIES & PACKING MATERIALS
****

	1-690-743-11	CORD, CONNECTION	
	1-696-308-11	CORD (WITH CONNECTOR)	
	1-696-551-11	CORD, CONNECTION	
*	3-376-998-01	CUSHION (UPPER)	
*	3-376-999-01	CUSHION (LOWER)	
*	3-388-951-01	INDIVIDUAL CARTON (US)	
*	3-388-952-01	INDIVIDUAL CARTON (AEP, G, E)	
	3-756-793-11	MANUAL, INSTRUCTION (ENGLISH, FRENCH, GERMAN, SPANISH, CHINESE) (AEP, G, E)	
	3-756-793-21	MANUAL, INSTRUCTION (ENGLISH, FRENCH) (US)	
	3-756-793-41	MANUAL, INSTRUCTION (DUTCH, SWEDISH, ITALIAN, PORTUGUESE) (AEP)	
	4-875-574-00	SHEET, PROTECTION	
	X-3363-344-1	MAGAZINE ASSY (2)	

****

****
HARDWARE LIST
****

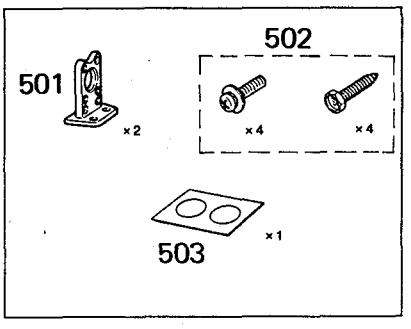
#1	7-621-255-40	SCREW +BVTT 2X6 (S)
#2	7-621-773-95	SCREW +PTT 2.6X6 (S)
#3	7-685-104-19	SCREW +P 2X6 TYPE2 NON-SLIT
#5	7-621-255-10	SCREW +P 2X3
#4	7-682-662-09	SCREW +PSW 4X10
#6	7-621-770-67	SCREW(+PTT 2.6X8), GROUND POINT
#7	7-627-554-07	SCREW, PRECISION +P 2X2.2
#8	7-621-255-20	SCREW +PTT 2X4 (S)
#9	7-624-104-04	STOP RING 2.0, TYPE -E
#10	7-627-554-37	SCREW, PRECISION +P 2X1.8 TYPE1
#11	7-621-259-25	SCREW +P 2.6X4
#12	7-624-102-04	STOP RING 1.5, TYPE -E
#13	7-627-553-27	SCREW, PRECISION +P 2X2.5
#14	7-621-255-55	SCREW +PTT 2X8 (S)
#15	7-628-253-15	SCREW +PS 2X5
#16	7-627-852-17	+P 1.7X4
#17	7-627-553-37	PRECISION SCREW +P 2X3 TYPE 3
#18	7-685-102-19	SCREW +P 2X4 TYPE2 NON-SLIT

****

Ref. No.	Part No.	Description	Remark

MOUNTING HARDWARE
****

* 501	3-375-508-01	BRACKET (300)	
502	X-3366-634-1	SCREW ASSY	
503	3-375-509-01	LABEL (FITTING HOLE) US, AEP	



NEW

CDX-70/U70

SONY
SERVICE MANUAL

US Model
CDX-U70

AEP Model
E Model
CDX-70

CORRECTION-1

Correct your service manual as shown below.

☛ : **indicates corrected portion.**

Page	INCORRECT			CORRECT	
	No.	Part No.	Description	Part No.	Description
45	IC653	8-759-165-82	IC PST600E	8-759-167-83 ☚	IC PST600EMT

Sony Corporation
Mobile Electronics Company

9-957-792-91

English
94H0579-1
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CDX-70/U70

SONY
SERVICE MANUAL

US Model
AEP Model
E Model

SUPPLEMENT-1

File this supplement with the service manual.

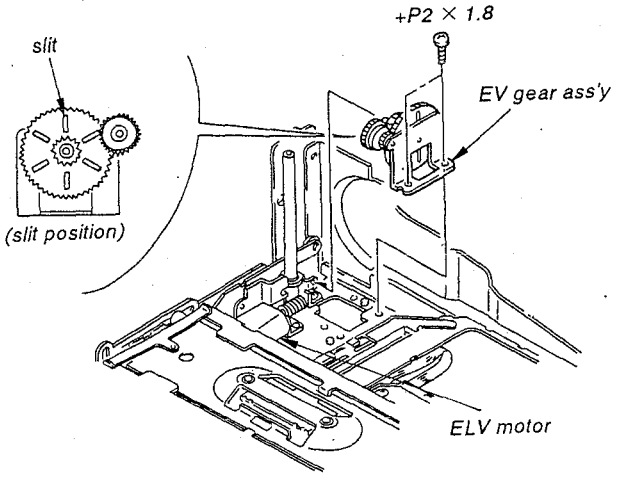
Subject: Mechanical Adjustments

[ELEVATOR HEIGHT ADJUSTMENT]

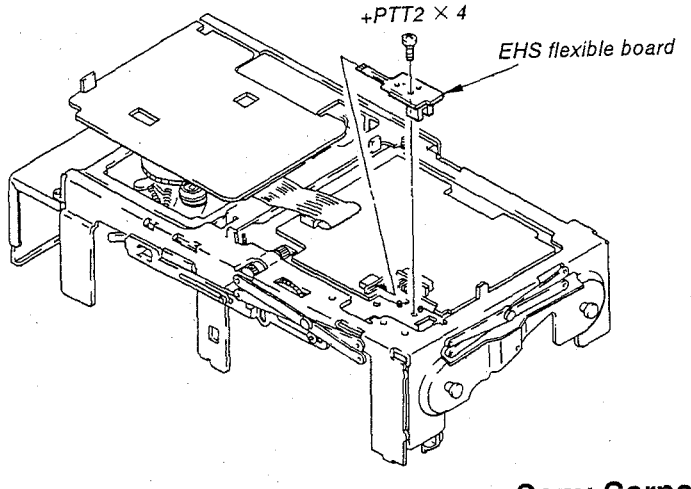
This adjustment should be done when replacing the rack assembly on the parts related to it.

Procedure:

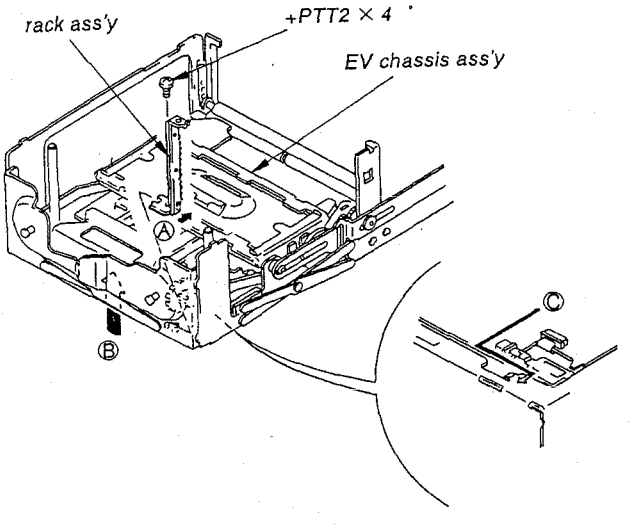
1. Fit the EV gear assembly after adjusting its slit position as shown in the figure. (When the slit position is out of order after fitting, it can be adjusted finely by turning the worm gear of the ELV motor.)



2. EHS Flexible Board Fitting.



3. Fit the rack assembly putting it in the arrow Ⓐ direction. At this time insert a spacer (approx. 1 mm thickness) or fit the rack assembly while pushing the EV chassis assembly in the arrow Ⓑ direction.



Note: When this adjustment is out of order, it doesn't operate normally and the roaring of the motor can be heard. In this case adjust again.

Sony Corporation
Mobile Electronics Group

English
93F0572-1D
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CDX-70/U70

SONY

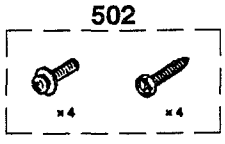
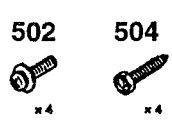
SERVICE MANUAL

US Model
CDX-U70
AEP Model
E Model
CDX-70

CORRECTION-2

Correct your service manual as shown below.

____ (Under line) : indicates corrected portion.

Page	INCORRECT			CORRECT		
	Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
49	502	X-3366-634-1	SCREW ASSY	502	7-682-662-09	SCREW +PSW 4X10
	504	———	———	504	3-302-126-01	SCREW, TAPPING (DIA. 5X20)
						

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